

100 CASES
IN
EAR, NOSE & THROAT

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Case 1:

A 10 year old child was having a right mucopurulent otorhea for the last 4 years. A week ago he became dizzy with a whirling sensation, nausea, vomiting and nystagmus to the opposite side; his deafness became complete and his temperature was normal. Three days later he became feverish, irritable and continuously crying apparently from severe headache. Also he had some neck retraction. The child was not managed properly and died by the end of the week.

Diagnosis & reasons	Right chronic suppurative otitis media (mucopurulent otorhea of 4 years duration) complicated by suppurative labyrinthitis (dizziness, nausea and vomiting with nystagmus to the opposite side and complete loss of hearing) and then complicated by meningitis (fever, severe headache and neck retraction).
Explain the following manifestations	Whirling sensation: vertigo due to inner ear inflammation Nystagmus to the opposite side: suppurative labyrinthitis leading to fast phase of eye movement to the opposite ear and slow phase to the diseased ear nystagmus direction is called according to the fast phase. In serous labyrinthitis with no inner ear cell destruction the direction of nystagmus is toward the diseased ear. Severe headache: increased intracranial pressure due to meningitis Neck retraction: due to meningeal inflammation
Further examination &/or investigations	• Otologic examination possible finding of a marginal perforation of atticotympanic CSOM (cholesteatoma) • Audiogram to reveal SNHL in the affected ear • Kernig's and Brudzinski's signs • Fundus examination to show papilledema • Lumbar puncture: turbid high pressure CSF with pus rich in proteins • Complete blood picture
Treatment	• Antibiotics that cross the blood brain barrier • Analgesics • Repeated lumbar puncture to drain infected CSF and to relieve symptoms and to inject antibiotics • Treatment of the underlying otitis media appropriately according to its type

Case 2:

A 50 year old male patient complained of right earache of 2 days duration. The pain was especially severe on chewing food and during speech. There was also marked edema of the right side of the face. On examination, pressure on the tragus was painful; and there was a small red swelling arising from the anterior external auditory meatal wall. Rinne test was positive in the right ear. The patient gave a history of 2 previous similar attacks in the same ear during the last six months but less severe.

CASE 2	
Diagnosis & reasons	Recurrent furunculosis of the right external auditory canal (pain in the ear with movements of the temporomandibular joint or pressure on the tragus, edema of the face and a small red swelling in the anterior wall of the external auditory canal)
Explain the following manifestations	Severe pain on chewing food: movements of the temporomandibular joint lead to movements of the cartilaginous external auditory canal that is lined by skin containing hair follicles from which the furuncle arises. Edema of the right side of the face: extension of the inflammatory edema to the face in severe cases Rinne positive: means normal hearing and NO conductive hearing loss because when air conduction is better than bone conduction it is called Rinne positive Previous similar attacks: recurrence the most probable cause is Diabetes mellitus
Further examination &/or investigations	• Otoscopic examination of the tympanic membrane if possible • Blood glucose analysis to discover diabetes
Treatment	Antibiotics Analgesics Never incise or excise for fear of perichondritis Local antibiotic or glycerine ichthyol ointment Proper control of diabetes if discovered

Case 3:

A 10 year old child complained of a right mucopurulent otorrhea for the last 2 years. He suddenly became feverish and this was associated with diminution of the ear discharge. There was also tenderness on pressure behind the auricle. The retroauricular sulcus was preserved. There was no retroauricular fluctuation.

CASE 3	
Diagnosis & reasons	Right chronic suppurative otitis media (mucopurulent discharge of 2 years duration) complicated by mastoiditis (fever with decreased ear discharge, tenderness behind the auricle with preservation of retroauricular sulcus; it is not an abscess because there is no retroauricular fluctuation).
Explain the following manifestations	Diminution of ear discharge: reservoir sign dischrge decreases but is still there and whenever discharge decreases fever and other constitutional symptoms increase in intensity Tenderness behind the auricle: due to inflammation of the bone of the mastoid process and its overlying periosteum Retroauricular sulcus preserve: as the inflammatory process is subperioteal No retroauricular fluctuation: it is mastoiditis and so is not a mastoid abscess yet
Further examination &/or investigations	Otoscopic examination of the ear possible finding of a cholesteatoma Look for the rest of the manifestations of mastoiditis as sagging of the posterosuperior wall of the bony external auditory canal CT scan of the ear to show opacity in the mastoid bone Complete blood picture
Treatment	Medical treatment in the form of antibiotics and Drainage of the ear through myringotomy and Mastoidectomy is essential to remove all disease from the ear

Case 4:

A 9 year old child has been complaining of right continuous offensive ear discharge for the last 3 years. A month ago he began to suffer from headache, fever and some vomiting for which he received symptomatic treatment. The patient's condition was stable for a while, then after 2 weeks he started to suffer from severe headache and drowsiness. The patient also noticed difficulty going up and down the stairs. A week later, he developed weakness in the left arm and left leg, and became markedly drowsy. He became comatose the next day.

CASE 4	
Diagnosis & reasons	Right atticoantral (cholesteatoma) chronic suppurative otitis media (continuous offensive ear discharge for 3 years) complicated by right temporal lobe abscess (manifestations of increased intracranial tension with weakness in the opposite side of the body on the left arm and leg)
Explain the following manifestations	Initial headache fever and vomiting: indicates the initial stage of a brain abscess formation in the stage of encephalitis Stable condition of 2 weeks: latent phase of brain abscess with decreased symptoms Severe headache and vomiting after 2 weeks: manifestations of a formed brain abscess leading to increased intracranial tension Difficulty going up and down the stairs: due to hemiparesis (weakness) in the opposite left leg to the diseased ear Comatose: final stage of brain abscess
Further examination &/or investigations	• Otoscopic examination of the ear • CT scan with contrast to locate the brain abscess • Complete blood picture to show leucocytosis very good to know prognosis with treatment • Fundus examination to show papilledema
Treatment	• Antibiotics that cross the blood brain barrier • Drainage or excision of the brain abscess neurosurgically • Tympanomastoidectomy to remove the cholesteatoma from the ear • Avoid lumbar puncture as it might lead to conization of the

Case 5:

A 6 year old child developed severe pain in both ears together with a rise of temperature (39 C) following an attack of common cold. The child received medical treatment that lead to drop of his temperature and subsidence of pain; so the physician stopped the treatment. However, the mother noticed that her child did not respond to her except when she raised her voice. This decreased response remained as such for the last 2 weeks after the occurrence of the primary condition.

CASE 5	
Diagnosis & reasons	Common cold leading to bilateral acute suppurative otitis media (fever and earache) complicated by nonresolved acute otitis media or otitis media with effusion (only symptom is a hearing loss)
Explain the following manifestations	Ear condition following common cold: due to extension of infection along eustachian tube Decreased response to sound: fluid due to non resolved acute otitis media behind the drum leads to decreased vibration of the tympanic membrane
Further examination &/or investigations	- Otoscopic examination will reveal in the primary condition a congested maybe bulging tympanic membrane and in the secondary condition a retracted drum showing a fluid level with loss of lustre - Audiogram will show an air bone gap indicating a conductive hearing loss - Tympanogram will show either a type C (negative peak) or a type B (flat) curves - X-ray of the nasopharynx might reveal an underlying adenoid enlargement specially if the condition is recurrent
Treatment	Continue antibiotic treatment until hearing returns to normal May combine treatment with antihistamines, corticosteroids and mucolytics Insertion of ventilation tubes (grommet) in the drum if condition persistent or recurrent Usage of tubes relies on tympanometry findings if the curve is type B flat curve Adenoidectomy is required if there is an enlarged adenoid obstructing the eustachian tube

Case 6:

A 3 year old boy presented to the ENT specialist because of an inability to close the right eye and deviation of the angle of the mouth to the left side upon crying of 2 days duration. His mother reported that he had severe pain in the right ear 5 days prior to his present condition. She also added that his earache improved on antibiotic therapy.

CASE 6	
Diagnosis & reasons	Right acute suppurative otitis media (earache that improved with antibiotics of 2 days duration) complicated by right lower motor neuron facial paralysis (inability to close the right eye and deviation of the angle of the mouth to the left side)
Explain the following manifestations	Inability to close the right eye: paralysis of the orbicularis oculi muscle supplied by the facial Deviation of the angle of the mouth to the left: muscles of the orbicularis oris of the left non paralysed side pull the mouth to the left side Onset of paralysis 5 days only after the original condition: due to pressure of the inflammatory exudate in the middle ear on a dehiscence (exposed) facial nerve
Further examination &/or investigations	• Otoscope examination may show a congested bulging tympanic membrane • Examination of the rest of the facial nerve to diagnose the proper level of paralysis • Electroneuronography of the facial nerve to estimate the degree of damage • Audiogram and tympanogram
Treatment	Urgent myringotomy to drain the middle ear and allow for facial nerve recovery Antibiotics for acute suppurative otitis media preferably according to culture and antibiotic sensitivity Care of the eye during period of paralysis by eye drops, ointment and covering of the eye

Case 7:

A 30 year old female complained of bilateral hearing loss more on the right side following the delivery of her first child; hearing loss was marked in quiet places but hearing improved in a noisy environment. Both tympanic membranes showed a normal appearance. Rinne tuning fork test was negative.

CASE 7	
Diagnosis & reasons	Bilateral otosclerosis (hearing loss related to pregnancy, more marked in quiet environment, normal tympanic membranes, Rinne tuning fork test negative that is bone conduction better than air conduction indicating conductive hearing loss)
Explain the following manifestations	Hearing loss marked in quiet places: patient has conductive hearing loss in noisy environment the speaker usually raises his voice and so patient hears better (paracusis Wilsii) Normal appearance of both tympanic membranes: this is the common finding in rare cases a reddish tympanic membrane may be present called Schwartze's sign (flamingo red appearance) Rinne tuning fork test negative: that is bone conduction better than air conduction indicating conductive hearing loss
Further examination &/or investigations	• Other symptoms (tinnitus, sensorineural hearing loss, vertigo) • Audiogram shows either air bone gap indicating conductive hearing loss or low bone curve indicating sensorineural hearing loss or both indicating mixed hearing loss • Tympanogram usually shows type As with stunted type curve • CT scan may show decreased density of the bone around the inner ear (otospongiotic focus) indicating activity of the disease
Treatment	Stapedectomy (the best) if hearing loss is conductive or mixed Hearing aid if patient refuses surgery or has pure sensorineural hearing loss Medical treatment to stop progression of the disease (fluoride therapy) if disease is extensive Avoid contraceptive pills and pregnancy in order to limit the disease

Case 8:

After a car accident a young male complained of inability to close the right eye and deviation of the angle of the mouth to the left side together with dribbling of saliva from the right angle of the mouth. There was also a right hearing loss and a blood clot was found in the right external auditory canal. 3 days later a clear fluid appeared in the right ear that increased in amount on straining. A day later the patient was drowsy and developed fever and neck stiffness.

CASE 8	
Diagnosis & reasons	Longitudinal fracture of the right temporal bone (accident, blood in external auditory canal and hearing loss) complicated by right lower motor neuron facial paralysis (inability to close the right eye and deviation of the angle of the mouth to the left side) and complicated by CSF otorhea (clear fluid in the right external auditory canal that increased with straining) and later complicated by meningitis (drowsy, fever and neck stiffness)
Explain the following manifestations	Dribbling of saliva from angle of mouth: due to facial nerve paralysis leading to inability to coapte the lips so angle of mouth is open and droops downwards with escape of saliva outwards Hearing loss: most probably due to longitudinal fracture causing tympanic membrane perforation and auditory ossicular disrruption leading to conductive hearing loss also the blood clot may cause obstruction of the external auditory canal leading to conductive hearing loss Clear fluid increases with straining: CSF otorhea as CSF pressure increases with straining causing increase in the otorhea Neck stiffness: due to meningeal irritation and inflammation
Further examination &/or investigations	• CT scan to diagnose the fracture and study its extent • Topognostic testa for the facial nerve as (Shirmer's, stapedius reflex,...) to know the level of paralysis • Electroneuronography: to study the electrophysiologic status of the facial nerve • Audiogram: to know the type of hearing loss • Examination of fluid dripping from the ear • Lumbar puncture: increased pressure of turbid pus containing

	CSF
Treatment	Treatment of meningitis: antibiotics, lower CSF pressure by repeated lumbar puncture, diuretics and mannitol 10% Treatment of CSF otorrhea: semisitting position, avoid straining, diuretics and close observation of the patient regarding fever and neck stiffness for the development of meningitis Treatment of facial nerve paralysis: care of the eye, surgical exploration and repair if electroneuronography reveals 90% degeneration of the affected nerve within one week of the onset of paralysis Treatment of hearing loss: tympanoplasty if the hearing loss or tympanic membrane perforation persists for more than 6-8 weeks

Case 9:

A 28 year old male has been complaining of hearing loss in the left ear for the last 6 years. The hearing loss was progressive in nature and accompanied by tinnitus. During the last 6 months there was swaying during walking to the left side, a change in his voice and an inability to close the left eye with deviation of the angle of the mouth to the right side. Otologic examination showed no abnormality. The corneal reflex was lost in the left eye.

CASE 9	
Diagnosis & reasons	Left acoustic neuroma (progressive history of hearing loss over 6 years followed by imbalance due to cerebellar manifestations and developing neurological manifestations)
Explain the following manifestations	Hearing loss of 6 years duration: pressure of the tumor on the eighth nerve responsible for hearing and balance Swaying during walking to the left side: cerebellar ataxia always to wards the side of the lesion due to weakness (hypotonia) of the muscles on the same side of the lesion Change of voice: intracranial vagus paralysis leading to vocal fold paralysis Inability to close the eye: left lower motor neuron paralysis as the facial nerve accompanies the vestibulocochlear nerve in the internal auditory canal

	Absent corneal reflex in the left eye: due to facial or trigeminal paralysis with trigeminal paralysis the contralateral reflex is lost as well as the patient can not feel in the affected left cornea
Further examination &/or investigations	• MRI of the internal auditory canals, cerebellopontine angles and inner ears • CT scan if MRI is not available • Audiological evaluation especially auditory brainstem response • Electrophysiological tests for the facial nerve
Treatment	Excision of the neuroma In old patients another option is the gamma knife (directed radiotherapy) to limit growth of the tumor In young patients with small tumors that do not produce new symptoms other than hearing loss it is advised to follow up the case with MRI on a 6-12 month basis as most of the tumors do not grow and so do not require surgery or gamma knife

Case 10:

A 35 year old female suddenly complained of an attack of bleeding from her right ear (otorrhagia). An ENT specialist packed the ear and after removal of the pack found an aural polyp. The patient also complained of pulsatile tinnitus in the right ear of 2 years duration and a change in her voice of 2 months duration. On laryngeal examination there was right vocal fold paralysis, the vocal fold was found in the abduction position. No lymph node enlargement was found in the neck.

CASE 10	
Diagnosis & reasons	Right glomus jugulaire tumor (bleeding from the ear, pulsatile tinnitus and neurological manifestations of the jugular foramen syndrome)
Explain the following manifestations	Aural polyp: this is not an inflammatory polyp it is extension of the tumor mass in the external auditory canal when touched by any instrument will cause severe bleeding Pulsatile tinnitus: the sound heard by the patient is that of the blood flowing in the very vascular tumor mass the sound disappears when the jugular vein in the neck is compressed or when there is a sensorineural hearing loss in the ear

	Abduction position of the vocal fold: due to a complete vagus paralysis paralysing all muscles of the right hemilarynx and so the vocal fold rests in the cadaveric abduction position No lymph node enlargement: glomus is a benign tumor there is no lymph node metastasis
Further examination &/or investigations	• CT scan with contrast to know the extent of the tumor • MRI and MR angiography (MRA) • Angiography to know the feeding vessels of the tumor • Examination of the entire body for a possible associated chromaffin tissue tumors as pheochromocytoma especially in patients that are hypertensive
Treatment	Excision of the tumor via the infratemporal approach according to its extent

Case 11:

A 30 year old female has been suffering from seasonal nasal obstruction for the last few years. A watery nasal discharge and attacks of sneezing accompanied this nasal obstruction. 2 weeks ago she had an attack of common cold, she refused to have medical treatment and 2 days later she began to develop pain over the forehead and a mild fever. She did not receive any treatment and so recently developed severe headache with a high fever (40 C) and became severely irritable and could not withstand light. On examination there was marked neck and back stiffness.

CASE 11	
Diagnosis & reasons	Nasal allergy (seasonal, watery nasal discharge, sneezing and nasal obstruction) complicated by acute frontal sinusitis (mild fever, and pain over the forehead) and later complicated by meningitis (high fever, irritability, can not withstand light and neck and back stiffness)
Explain the following manifestations	Watery nasal discharge: due to edematous fluid of nasal allergy that pours from the nose after accumulating in the nasal mucosa Pain over the forehead: due to inflammation of the frontal sinus it could be a continuous pain of the inflammation or a morning vacuum

	headache Could not withstand light: photophobia that occurs with meningitis
Further examination &/or investigations	• Lumbar puncture: increased pressure of turbid pus containing CSF • CT scan to diagnose frontal sinusitis • Complete blood picture to show leucocytosis • Fundus examination • After management of acute condition investigations for allergy (skin tests, RAST, ...)
Treatment	Treatment of meningitis (antibiotics, lower intracranial tension by repeated lumbar puncture diuretics mannitol 10%) Treatment of frontal sinusitis (functional endoscopic sinus surgery or open surgery) Treatment of underlying predisposing cause which is nasal allergy (avoid the cause of allergy, hyposensitization, pharmacotherapy by local or systemic steroids, antihistamines, mast cell stabilizers, ...)

Case 12:

A 25 year old patient had been complaining from severe acute rhinitis. On the fifth day he started to get severe headache, mild fever and marked pain over the left forehead. The patient did not receive any treatment and on the tenth day started to get repeated rigors and became severely ill. On examining the patient the following signs were detected:

- A large red tender swelling in the right nasal vestibule.
- Marked edema of both upper and lower right eye lids.
- Chemosis of the conjunctive in the right eye.
- Forward proptosis of the right eyeball.

CASE 12	
Diagnosis & reasons	Acute rhinitis complicated by two conditions: left frontal sinusitis (pain over the left forehead and mild fever) the second condition is right nasal furuncle due to excessive nasal secretions leading to fissures and bacterial infection in the nasal vestibule (a large tender swelling in the right nasal vestibule) the furuncle on the tenth day is complicated by cavernous sinus thrombosis (rigors, severely ill, edema of the right eye lids, chemosis of the conjunctive, proptosis of

	the right eyeball)
Explain the following manifestations	Rigors: is an indication that infection has reached the blood stream Chemosis of the conjunctiva: congestion and edema of the conjunctiva due to obstruction of the orbital veins that drain into the cavernous sinus Proptosis of the right eyeball: due to obstruction of the venous drainage of the eye via the retroorbital veins that drain into the cavernous sinus
Further examination &/or investigations	CT scan Blood culture Leucocytic count Fundus examination will show engorged retinal veins
Treatment	Hospitalization Intravenous antibiotics Anticoagulants Local antibiotic ointment to help furuncle to drain Treatment of frontal sinusitis

Case 13:

An 18 year old male patient complained of dull aching pain over the forehead for the last 3 years. This pain increased in the morning and decreased in the afternoons, together with intermittent nasal discharge. 10 days ago the pain became very severe with complete nasal obstruction and fever 38 C the patient did not receive the proper treatment and by the tenth day became drowsy with some mental behavioral changes, also there was vomiting and blurred vision.

CASE 13	
Diagnosis & reasons	Chronic frontal sinusitis (3 years duration, typical vacuum morning headaches) complicated recently (10 days ago, complete nasal obstruction, fever 38 C) the latest complication is a frontal lobe abscess (drowsy, mental behavioral changes, vomiting and blurred vision)
Explain the following	Morning headache: due to obstruction of the opening of the frontal sinus when the patient sleeps the opening is tightly closed due to

manifestations	edema and the air in the sinus is absorbed creating a negative pressure that causes headache in the morning when the patient stands up the edema is somewhat relieved and air enters the sinus and so the headache disappears or decreases in the afternoon Mental behavioral changes: the abscess causes pressure on the centers in the frontal lobe of the brain that is responsible for behavior Blurred vision: increased intracranial tension by the abscess causing vomiting and papilledema
Further examination &/or investigations	• Tenderness over the frontal sinus • CT scan with contrast to locate the abscess and diagnose the frontal sinusitis • Leucocytic count important after administering treatment for prognosis
Treatment	Neurosurgical excision or drainage of the abscess Treatment of frontal sinusitis both medically by antibiotics and surgically to drain the frontal sinus

Case 14:

A 52 year old male started to develop right sided progressively increasing nasal obstruction 6 months ago. This was followed by blood tinged nasal discharge from the right side as well. Due to looseness of the right second upper premolar tooth, the patient consulted a dentist who advised extraction, this resulted in an oroantral fistula. On examination there was a firm tender swelling in the right upper neck.

CASE 14	
Diagnosis & reasons	Cancer of the right maxillary sinus (right blood tinged nasal discharge, looseness of right upper second premolar tooth, swelling in the right upper neck)
Explain the following manifestations	Blood tinged nasal discharge: common early manifestation of cancer of the paranasal sinuses due to the presence of necrotic infected nasal mass Looseness of the right upper second premolar tooth: due to destruction of the root of the tooth by the malignant tumor as this tooth and the first molar are very close to the floor of the maxillary sinus Oroantral fistula: due to destruction of the alveolus and the palate by

	the malignant tumor leading to escape of saliva food and drink from the mouth to the maxillary antrum and then back out of the nose Firm tender swelling in the right upper neck: lymph node metastasis from the primary maxillary tumor it could be tender or not tender
Further examination &/or investigations	• Other symptoms include: orbital manifestations as diplopia, blindness and pain; headache and trigeminal neuralgic pain; swelling of the cheek; Horner's syndrome due to spread of malignancy from the retropharyngeal lymph node of Rouviere to the upper cervical sympathetic ganglion • CT scan: to diagnose, study the extent of the malignant lesion and its relation to the big blood vessels of the neck and look for other lymph node metastasis • Nasal endoscopy and biopsy to prove malignancy prior to treatment and to know the pathological type of the malignant tumor before deciding on the modality of treatment • General investigations to assess condition of the patient
Treatment	Surgical excision by maxillectomy (partial, total or radical according to tumor extent) Radiotherapy for extensive inoperable lesions Radical neck dissection for lymph node metastases Chemotherapy for inoperable tumors that do not respond to radiotherapy Palliative treatment for inoperable terminal cases

Case 15:

A 40 year old female has been complaining of nasal troubles of a long duration in the form of bilateral nasal obstruction, anosmia and nasal crustation. 2 months ago she developed mild stridor that necessitated a tracheostomy later on. She received medical treatment for her condition, but 1 month later developed severe to profound hearing loss that necessitated the use of a hearing aid.

CASE 15	
Diagnosis & reasons	Rhinolaryngoscleroma (nasal crustations of long duration, stridor)

Explain the following manifestations	Nasal obstruction: due to the presence of a scleroma mass or crustation or nasal synechia Stridor: laryngoscleroma causes subglottic stenosis and fibrosis causing biphasic stridor Profound hearing loss that necessitated a hearing aid: an old antibiotic used for the treatment of scleroma was streptomycin that was ototoxic causing sensorineural hearing loss now rifampicin is used with no such side effect
Further examination &/or investigations	• Examination of the nose shows crusts, nasal mass, offensive discharge • Examination of the larynx will show an area of subglottic stenosis may be in the form of a web • Biopsy: will show a chronic inflammatory process with endarteritis obliterans and two diagnostic structure the Minkulicz cell and the Russel body; the active cell the fibroblast is also seen
Treatment	Medical: Rifampicin 300mgm daily twice daily before meals Surgical: recanalization of the nose to relieve nasal obstruction Laser excision of the subglottic web to relieve dyspnea and stridor Follow up the condition until complete cure

Case 16:

A 24 year old male patient presented because of severe pain in the throat and the left ear that increased with swallowing of sudden onset and 2 days duration. He gave a history of sore throat and fever a few days prior to the condition. On examination, the patient looked very ill and has a thickened voice. The temperature was 39.5 C and the pulse 110/minute. The patient had fetor of the breath and was unable to open his mouth. There was marked edema of the palate concealing the left tonsil that was found injected. There was a painful hot swelling located below the left angle of the mandible. The left tympanic membrane was normal.

CASE 16	
Diagnosis & reasons	Acute tonsillitis (sore throat and fever) complicated by peritonsillar abscess {quinzy} (severe throat pain referred to the left ear, very ill, thickened voice, fever, fetor, unable to open his mouth, edema of the palate, painful hot swelling at the angle of the mandible)
Explain the following manifestations	Pain in the left ear: referred earache along Jacobson's tympanic branch (that supplies the middle ear) of the glossopharyngeal nerve (that supplies the palatine tonsil) Thickened voice: due to palatal edema Fetor of the breath: severe dysphagia leading to inability to swallow saliva together with the presence of an abscess in the oropharynx Unable to open his mouth: trismus due to irritation of the medial pterygoid muscle by the pus under tension in the peritonsillar abscess Left tonsil injected: markedly congested due to severe inflammatory process Hot swelling below the left angle of the mandible: jugulodigastric lymph adenitis Normal tympanic membrane: there is no acute otitis media pain in the ea is referred from the throat
Further examination &/or investigations	• Complete blood picture leucocytosis • CT scan
Treatment	Medical treatment: antibiotics, analgesics, antipyretics and antiinflammatory drugs Surgical drainage of the quinzy (pus pointing, palatal edema, throbbing pain, pitting edema) Tonsillectomy after 2-3 weeks

Case 17:

A 5 year old boy was referred to an ENT specialist because of mouth breathing and impairment of hearing of 2 years duration. His mother reported that her child has almost constant mucoid nasal discharge that sometimes changes to a mucopurulent one and he snores during his sleep. On examination, the child has nasal speech and obvious mouth breathing. Examination of the

ears showed retracted tympanic membranes. Tympanograms were flat type B.

CASE 17	
Diagnosis & reasons	Adenoid enlargement (mouth breathing, nasal discharge, snoring, nasal speech) complicated by bilateral otitis media with effusion (impairment of hearing, retracted tympanic membranes type B tympanograms)
Explain the following manifestations	Mucoid nasal discharge that can change to be mucopurulent: adenoid enlargement may be complicated by ethmoiditis causing the mucopurulent nasal discharge Snoring: due to bilateral nasal obstruction during his sleep can progress to respiratory obstruction during his sleep (sleep apnea) Nasal speech: rhinolalia clausa due to nasal obstruction were the letter m is pronounced as b Type B tympanograms: due to presence of fluid behind the intact retracted tympanic membrane leading to no vibrations of the drum
Further examination &/or investigations	• Other symptoms and signs: adenoid face, stunted growth, poor scholastic achievement, nocturnal enuresis,..... • X-ray lateral view skull: soft tissue shadow in the nasopharynx causing narrowing of the nasopharyngeal airway • Audiogram: air bone gap indicating conductive hearing loss
Treatment	Adenoidectomy Bilateral ventilation tube (grommet) insertion in the tympanic membranes

Case 18:

A male patient 49 year old presented with the complaint of enlargement of the upper deep cervical lymph nodes on both sides of the neck of 6 months duration. The nodes appeared first on the right side later on the other side. The patient gave a history of decreased hearing in the right ear that was intermittent but later became permanent. Recently he developed diminution of hearing in his left ear, nasal regurge, nasal intonation of voice and recurrent mild nosebleeds.

CASE 18	
Diagnosis & reasons	Nasopharyngeal carcinoma with lymph node metastasis (early appearance of lymph node metastasis as the nasopharynx is one of the silent areas of the head and neck – occult primary sites; decreased hearing due to eustachian tube affection)
Explain the following manifestations	Bilateral enlargement of upper deep cervical lymph nodes: the nasopharynx may send metastasis to both sides because it is present in the center of the head and neck Decreased hearing in the right ear: due to eustachian tube destruction by the malignant tumor causing right otitis media with effusion and a retracted tympanic membrane leading to a conductive hearing loss Nasal regurge: due to palatal paralysis Nasal intonation of voice: due to nasal obstruction and palatal paralysis it is a combined rhinolalia clausa and aperta
Further examination &/or investigations	• CT scan • Nasopharyngoscopy and biopsy • Audiogram and tympanogram • General investigations
Treatment	Radiotherapy for the primary nasopharyngeal carcinoma Radical neck dissection for residual lymph node metastasis after treatment with radiotherapy Chemotherapy in certain selected cases according to histopathological finding of biopsy Palliative treatment for terminal cases

Case 19:

A 40 year old female began to experience difficulty in swallowing for the last 3 years. This difficulty in swallowing was to all kinds of food and the condition showed variation in the degree of dysphagia and was associated with a sense of obstruction at the root of the neck. For the last 2 months, she developed rapidly progressive difficulty in swallowing even to fluids together with a change in her voice. Recently she noticed a firm non-tender swelling in the right upper neck.

CASE 19	
Diagnosis & reasons	Plummer – Vinson disease (dysphagia of intermittent nature for 3 years to all kinds of food) leading to hypopharyngeal or esophageal malignancy (progression of dysphagia in the last 2 months, change of voice, appearance of neck swelling indicating lymph node metastasis)
Explain the following manifestations	Sense of obstruction at the root of the neck: the level of obstruction in Plummer Vinson disease is due to the presence of pharyngeal and esophageal webs of fibrous tissue in the lower pharynx and upper esophagus Change of voice: due to malignant involvement of the recurrent laryngeal nerve leading to vocal fold paralysis Firm non tender swelling in the right upper neck: lymph node metastasis in the right upper deep cervical lymph node
Further examination &/or investigations	• Indirect laryngoscopy: tumor is seen in the hypopharynx with overlying froth • Direct laryngoscopy and biopsy • X-ray lateral view neck showing a wide prevertebral space displacing the airway anteriorly • CT scan to show extent of the tumor especially lower extent • Barium swallow • General investigations to assess the general condition of the patient
Treatment	Surgical excision by total laryngopharyngectomy and radical neck dissection of metastatic lymph nodes Radiotherapy Chemotherapy Palliative treatment Type of treatment depends on general condition of patient, age of patient, extent of tumor and its histopathological type

Case 20:

4 hours following an adenotonsillectomy for a 6 year old the pulse was 110/min, blood pressure 100/70, respiration 20/min and the child vomited 250 cc of a dark fluid. 2 hours later he vomited another 150 cc of the same dark fluid, the pulse became 130/min, the blood pressure became 80/50. The respiration rate remained 20/min.

CASE 20	
Diagnosis & reasons	Post-tonsillectomy reactionary hemorrhage (rising pulse, lowering of blood pressure, vomiting of altered blood, 4 hours following an adenotonsillectomy)
Explain the following manifestations	Pulse is 110/min then rises to 130/min: a continuous rising pulse is due to tachycardia as a compensation for the blood loss Vomiting of dark fluid: altered blood (acid hematin when blood is changed by stomach HCL)
Further examination &/or investigations	• Examination of the throat site of bleeding may be from the tonsil bed or from the adenoid bed • Rapid assessment of hemoglobin
Treatment	Antishock measures (fluid and blood transfusion, steroids, coagulants) Surgical hemostasis under general anesthesia

Case 21:

A 3 year old child was referred to an ENT specialist because of cough, difficulty of respiration and temperature 39.5 C of few hours duration. The child was admitted to hospital for observation and medical treatment. 6 hours later, the physician decided an immediate tracheostomy. After the surgery the child was relieved from the respiratory distress for 24 hours then he became dyspnic again. The physician carried out a minor procedure that was necessary to relieve the child from the dyspnea. Few days later the tracheostomy tube was removed and the child discharged from the hospital.

CASE 21	
Diagnosis & reasons	Acute laryngotracheobronchitis – CROUP (dyspnea relieved by tracheostomy placed for a few days only, cough and fever) complicated by an obstruction of the tracheostomy tube by secretions (relieved after cleaning the tube)

Explain the following manifestations	Cough: common with croup due to the presence of tracheal and bronchial inflammation and secretions Temperature 39.5 C: temperature in croup is variable may be mild or severe according to the virus causing the condition Observation and medical treatment: the main observation is that of the degree of respiratory distress and tachycardia to detect early heart failure. Medical treatment is mainly steroids and humidification of inspired air, mucolytics and expectorants to facilitate getting rid of the secretions in the bronchi and trachea. Minor procedure: clearance of the tracheostomy tube from accumulated secretions.
Further examination &/or investigations	• Pulse rate • Cyanosis • Chest x-ray to differentiate from foreign body inhalation
Treatment	Steroids Mucolytics Expectorants Antibiotics Humidified oxygen inhalation Treatment of heart failure

Case 22:

A 45 year old male who is a heavy smoker complained of change in his voice of 3 years duration in the form of hoarseness. During the last 3 months his voice became very hoarse and he developed mild respiratory distress. Later he became severely distressed and required a surgical procedure to relieve the distress. On examination there were bilateral firm non-tender upper neck swellings.

CASE 22	
Diagnosis & reasons	Leukoplakia of the vocal folds (hoarseness of 3 years duration) leading to vocal fold carcinoma (glottic carcinoma increased hoarseness, respiratory distress relieved by tracheostomy) with bilateral lymph node metastasis (firm non-tender upper neck swellings)

Explain the following manifestations	Hoarseness: the presence of lesions whether leukoplakia or carcinoma on the vocal fold will limit its vibration capability causing hoarseness Bilateral firm non-tender swellings in the upper neck: lymph node metastasis not common with vocal fold carcinoma but may occur when the tumor spreads to the neighboring supraglottis or subglottis Surgical procedure: tracheostomy to bypass the glottic lesion causing respiratory obstruction
Further examination &/or investigations	• Other symptoms: cough and hemoptysis • Indirect laryngoscopy: visualize the lesion and vocal fold paralysis • Laryngeal stroboscopy: to examine the vocal fold movement very useful with small vocal fold carcinoma lesions • Direct laryngoscopy and biopsy • CT scan and MRI • Chest X-ray
Treatment	Laser excision of the lesion Laryngofissure and cordectomy Laryngectomy (partial or total) Radiotherapy for small cordal lesions Chemotherapy and palliative treatment for terminal cases

Case 23:

A 40 year old female had repeated attacks of chest infection not improving by medical treatment. The patient was admitted for investigation of her condition in a hospital. A chest x-ray revealed basal lung infection. During her hospital stay it was noticed that she suffered from chest tightness and choking following meals. The ward nurse noticed that the patient refuses fluid diet and prefers solid bulky food.

CASE 23	
Diagnosis & reasons	Cardiac achalasia (basal chest infection due to aspiration, choking following meals and dysphagia more to fluids)
Explain the following manifestations	Chest infection not improving by medical treatment: because of continuous aspiration the original condition of cardiac achalasia must be treated first and the chest infection will improve subsequently Basal lung infection by X-ray: with aspiration by gravity the basal lung is always affected

	Patient refuses fluid diet and prefers solid food: solid food creates a better stimulation by rubbing against the esophageal wall and so the cardiac sphincter opens while fluids need to accumulate in the esophagus before causing a sufficient stimulus
Further examination &/or investigations	• X-ray barium swallow esophagus shows a large dilatation of the esophagus and a stenosis at the level of the cardiac sphincter • Esophagoscope • CT scan with barium swallow • Chest X-ray
Treatment	Heller's operation Esophagoscopy dilatation

Case 24:

A 4 year old child was referred to an ENT specialist by a pediatrician because of repeated attacks of severe chest infection (three in number) during the last month that usually resolved by antibiotics, expectorants and mucolytics, but the last attack did not resolve. On examination the lower right lobe of the lung showed no air entry and a lot of wheezes all over the chest by auscultation. A chest x-ray revealed an opacified lower right lobe. Temperature 38 C, pulse 120/min and respiration rate 35/min.

CASE 24	
Diagnosis & reasons	Foreign body inhalation in the right lung most probably a vegetable seed as a peanut (attacks of chest infection, no air entry and opacified lower right lobe of the lung, fever tachycardia and dyspnea 35/min normal retentive respiratory rate in a child should not exceed 18/min)
Explain the following manifestations	Last attack of chest infection did not resolve: the chemical bronchopneumonia caused by the vegetable seed has reached a severity that it could not be controlled by the medical treatment always suspect a foreign body inhalation in a non-responsive chest infection in a child Wheezes all over the chest: although the foreign body is in the right lung the site of decreased air entry and an opacified lobe by X-ray but the chemical effect of the fatty acids in the vegetable seed is all over the lung causing marked dyspnea and tachypnea as well

	Pulse 120/min: respiratory failure is also accompanied by tachycardia which might lead to heart failure
Further examination &/or investigations	• Proper history • Tracheobronchoscopy
Treatment	Tracheobronchoscopy and removal of the foreign body followed by Antibiotics Steroids Expectorants

Case 25:

A 3 year old child suddenly complained of a sore throat and enlarged left upper deep cervical lymph node. Later he suffered from marked body weakness and mild respiratory distress that progressively became severe. Oropharyngeal examination revealed a grayish membrane on the left tonsil, soft palate and posterior pharyngeal wall. 2 days later he developed nasal regurge. His temperature was 38 C and pulse 150/min.

CASE 25	
Diagnosis & reasons	Diphtheria (sore throat, enlarged upper deep cervical lymph node, marked weakness, respiratory distress, extension of the membrane outside the tonsil, low grade fever with marked tachycardia)
Explain the following manifestations	Enlarged upper deep cervical lymph node: markedly enlarged (Bull's Neck) common in diphtheria in the early stages of the disease Respiratory distress: could be because of heart failure caused by marked toxemia or due to extension of the diphtheritic membrane to the larynx Grayish membrane: due to tissue necrosis Extension of the membrane outside the surface of the tonsil: diphtheria is a disease of the mucous membrane not only of the tonsil Pulse 150/min: toxemia causing heart failure leading to a rapid pulse
Further examination &/or investigations	• Swab from the membrane • Bacteriological diagnosis
Treatment	Start treatment immediately do not wait for a definite bacteriological

	diagnosis Antitoxin serum 20,000 – 100,000 units daily until the membrane disappears Bacteriological swabs until the organism disappears from the throat Antibiotics Treatment of heart failure if present Tracheostomy for respiratory distress or even marked heart failure to decrease the effort of breathing by decreasing the respiratory dead space Passive and active immunization of the contacts of the patient
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Case 26:

A 45 year old male patient presented to the ENT emergency room with severe incapacitating dizziness of 5 days duration. The dizziness was continuous with no periods of rest and was accompanied by hearing loss and tinnitus in the right ear. He was admitted to hospital and medical treatment was started. The patient gave a history of right ear offensive continuous discharge of seven years duration. On examination there was right beating nystagmus. Otoscopic examination of the right ear showed a marginal attic perforation with a discharge rich with epithelial flakes, the edge of the perforation showed granulation tissue. The left ear was normal. On the next day the patient's condition became worse despite the medical treatment, he developed a mild fever of 38.5 C and the nystagmus became directed to the left ear. 2 days later the temperature became higher 40 C, the patient became irritable, but later became drowsy. On examination at this stage there was marked neck rigidity.

CASE 26

Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (seven years of offensive continuous ear discharge, marginal attic perforation with epithelial flakes, edge of the perforation shows granulation tissue) complicated by serous labyrinthitis (severe incapacitating dizziness, hearing loss and tinnitus, right beating nystagmus) followed by suppurative labyrinthitis (worsening of the condition despite medical treatment, mid fever 38 and left beating nystagmus) and finally complicated by meningitis (very high fever 40, irritability and drowsiness, marked neck rigidity)
Explain the following manifestations	Incapacitating dizziness: meaning vertigo due to serous labyrinthitis with irritation of the vestibular part of the inner ear Hearing loss: due to labyrinthitis is sensorineural hearing loss Right beating nystagmus: due to irritation of the vestibular endorgan with the slow phase away from the diseased ear and the fast phase towards the diseased ear Offensive continuous ear discharge: cholesteatoma causes continuous ear discharge that is offensive because of the presence of anaerobic organisms and because of bone destruction and erosion Nystagmus became directed to the left ear: indicating that serous labyrinthitis is now suppurative with destruction of the vestibular endorgan Drowsy: means a decrease in the level of consciousness that which occurs with meningitis and intracranial complications
Further examination &/or investigations	• CT scan • Audiogram • Lumbar puncture
Treatment	Treatment of meningitis: antibiotics, lower intracranial tension Treatment of cholesteatoma: tympanomastoidectomy Labyrinthitis will subside after removing the causing cholesteatoma (no need to carry out labyrinthectomy as this will spread more the infection)

Case 27:

The mother of a 3 year old child complained that her child had a fever 5 days ago. 2 days following that he developed severe right sided earache that kept the child continuously crying. A day later she noticed that his mouth was deviated to the left side and he was unable to close the right eye.

CASE 27	
Diagnosis & reasons	Right acute suppurative otitis media (fever of short duration, right sided earache) complicated by right lower motor neuron facial paralysis (inability to close the right eye and deviation of the angle of the mouth to the left) the cause is dehiscence of the fallopian canal in the middle ear so the pus under tension of acute suppurative otitis media causes inflammation and pressure on the facial nerve
Explain the following manifestations	Severe right earache: due to pus formation in the suppurative phase of acute suppurative otitis media leading to pressure and bulging of the tympanic membrane Unable to close the right eye: due to lower motor neuron facial nerve paralysis leading to paralysis of the orbicularis oculi responsible for the firm closure of the eye lids
Further examination &/or investigations	• Otoscopic examination: will most probably show a congested bulging tympanic membrane • Audiogram and tympanogram will show an air bone gap of conductive hearing loss and a flat tympanogram type B • Culture and antibiotic sensitivity of the ear discharge obtained after performing myringotomy
Treatment	Urgent myringotomy to relieve pressure on the facial nerve Antibiotics according to culture and antibiotic sensitivity Steroids to relieve edema due to inflammation of the facial nerve Care of the eye by drops ointment and closure to prevent possible corneal ulceration

Case 28:

A 30 year old female patient developed a sudden attack of fever and rigors. She was admitted to the fever hospital and properly investigated and received an antibiotic. On the fifth day after her admission a blood culture was requested and the result was negative for bacteria. The patient improved and was discharged from hospital; but 2 weeks later the condition recurred with a very high fever and there was a tender swelling in the right side of the neck. An otologic consultation was obtained as the patient mentioned that she had a right chronic offensive otorrhea for the last 5 years. The otologist found an aural polyp with purulent ear discharge. A laboratory workup showed Hb%=7gm% WBC count 23,000/cc.

CASE 28	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (chronic offensive otorrhea of 5 years duration, an aural polyp) complicated by lateral sinus thrombophlebitis (fever and rigors, tender lymphadenitis in the right upper deep cervical lymph nodes, marked anemia and leucocytosis)
Explain the following manifestations	Fever and rigors: due to spread of infection to the bloodstream Negative blood culture: as the patient is receiving antibiotics Tender swelling in the right upper neck: could be due to lymphadenitis caused by extending thrombophlebitis in the internal jugular vein or due to the inflammation of the veins wall Aural polyp: an indication of chronic ear inflammation especially by cholesteatoma Hb% 7gm%: marked anemia as the organism in the blood releases hemolysing causing hemolysis of the RBCs – it is one of the cardinal signs of thrombophlebitis
Further examination &/or investigations	• CT scan of the ear • MRI and MR venography to diagnose thrombophlebitis • Blood culture after stopping antibiotics for 48 hours • Blood film to exclude malaria • Leucocytic count and hemoglobin to follow up the case

Treatment	Intravenous antibiotics Anticoagulants to limit spread of the thrombus Tympanomastoidectomy for the cholesteatoma
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Case 29:

An 18 year old male patient presented to the ENT clinic with an offensive continuous right ear discharge of 2 years duration for which he received antibiotic ear drops, but with no improvement of his condition. A month ago a swelling appeared behind the right ear. The swelling was red, hot, tender and was accompanied by deep seated pain and a fever 39 C . The swelling was incised by a surgeon and pus released after which the temperature dropped to 37.5 C but the pus continued draining from the incision and the incision did not heal since then.

CASE 29	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (continuous offensive otorrhea, no improvement with antibiotic ear drops) complicated by mastoiditis and a mastoid abscess (swelling red hot tender, deep seated pain and fever followed by a mastoid fistula (incision made by surgeon, no healing of the incision)
Explain the following manifestations	Red hot tender swelling: criteria of an abscess that originated from the mastoid diagnostic when it is fluctuant Incision did not heal: as the cause of the mastoid abscess is mastoiditis in the bone of the mastoid the wound will never heal unless the underlying mastoiditis is treated by mastoidectomy to clear the bone of the mastoid from the infected bone tissue
Further examination &/or investigations	• Other criteria of mastoiditis as: sagging of the posterosuperior external auditory canal wall, reservoir sign, tenderness all over the mastoid especially at the tip, preservation of the retroauricular sulcus • X-ray shows haziness of the mastoid bone air cells indicating an inflammation of the bone partitions between the air spaces • CT scan to show the underlying cholesteatoma and its extensions • Audiogram

Treatment	Tympanomastoideotomy to remove the underlying causative cholesteatoma Antibiotics
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Case 30:

A 35 year old male patient had been complaining of a right continuous offensive otorrhea for the last 10 years. One month ago he had a very high fever and became drowsy. This condition lasted for 5 days, after which the fever dropped and the drowsiness disappeared. The patient kept complaining of a mild non continuous headache. One week ago the patient felt that he could not go up and down the stairs easily. Neurological examination revealed right side body weakness in the upper and lower limbs. There was also nystagmus and a difficulty on grasping objects by the right hand. Temperature was 36 C, pulse 80/min. The patient was slightly disoriented to his surrounding and was slow in his responses.

CASE 30	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (continuous otorrhea of 10 years duration) complicated by a cerebellar abscess (headache, imbalance, weakness on the same side of the body right, nystagmus, difficulty grasping objects by the right hand, temperature 36 C, disorientation and slow responses)
Explain the following manifestations	Original high fever and drowsiness: encephalitic stage of brain abscess Mild non-continuous headache: latent quiescent stage of the brain abscess Could not go up and down the stairs: imbalance and due to hypotonia on the right side (same side) of the body Difficulty in grasping objects: incoordination of cerebellar ataxia Disorientation and slow responses: end stage of brain abscess stage of stupor
Further	Examination of cerebellar function: finger nose test, knee heel

examination &/or investigations	test, dysidokinesia • CT scan with contrast for the brain and the ear • MRI • Fundus examination may show papilledema • Blood picture especially leucocytic count for follow up and prognosis
Treatment	Antibiotics that cross the blood brain barrier Avoid lumbar puncture as it might lead to conization of the medulla oblongata and death Drainage of the abscess or excision neurosurgically Tympanomastoidectomy for the cholesteatoma

Case 31:

A 25 year old female is complaining of bilateral nasal obstruction of 5 years duration. She gave a history of attacks of sneezing, lacrimation and watery nasal discharge that may be clear or yellowish green. On examination her nasal cavities were blocked by smooth glistening pedunculated nasal masses with a clear nasal discharge.

CASE 31	
Diagnosis & reasons	Nasal allergy (history of sneezing, watery nasal discharge) with allergic nasal polypi (smooth glistening pedunculated nasal masses)
Explain the following manifestations	Lacrimation: most cases of allergic rhinitis are accompanied by conjunctival spring catarrh causing lacrimation Yellowish green nasal discharge: may be due to secondary bacterial infection or the allergy itself as the discharge is rich in eosinophils that give the yellowish green color Glistening pedunculated nasal masses: due to the allergy the nasal mucosa is edematous and the lining mucosa of the sinuses is prolapsed like bags filled with water and hence they are pedunculated and glistening – the common sinuses to cause this are the ethmoid because of the large surface area of the mucosa as they are multiple sinuses
Further examination &/or investigations	• CT scan to visualize the extent of nasal polypi • Skin allergy tests • Radioallergosorbent test RAST • Serum IgE level

Treatment	Remove nasal polypi by endoscopic nasal surgery Treatment of allergy by avoidance of the cause of allergy, hyposensitization Treatment of allergy by medical treatment: steroids, local steroids, antihistamines Avoid non-steroidal antiinflammatory drugs as aspirin in all forms as it leads to the exacerbation of allergy and leads to the formation of nasal polypi (aspirin triade)
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Case 32:

A 50 year old male complained of a swelling in the upper right side of the neck of 2 months duration. The swelling was firm and non-tender and progressively increasing in size. The patient mentioned that he has been suffering from right side offensive blood stained nasal discharge of 6 months duration. Now he has diplopia, right side nasal obstruction and looseness of the teeth of the right side of the upper jaw.

CASE 32	
Diagnosis & reasons	Right cancer maxilla (right side offensive blood stained nasal discharge in a 50 year old) with right upper deep cervical lymph node metastasis (firm non-tender swelling in the right upper neck)
Explain the following manifestations	Firm non-tender swelling in the right upper neck: malignant lymph node metastasis is firm and usually non-tender but may be tender in some cases Right side offensive blood stained nasal discharge: due to the presence of the malignant tumor in the nasal cavity destroying the nasal mucosa with subsequent infection of the necrotic tissue Diplopia: double vision due to orbital extension by the tumor causing proptosis Looseness of the teeth of the right upper jaw: due to destruction of the roots of the teeth in the alveolus
Further examination &/or investigations	• Endoscopic examination of the nose and biopsy • CT scan to show the extent of the tumor, metastasis and involvement of the big vessels of the neck • Ophthalmic examination • Dental examination

Treatment	Surgical radical maxillectomy to remove the maxilla and the metastatic lymph nodes Radiotherapy for selected cases Chemotherapy Palliative management for inoperable cases
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Case 33:

A 30 year old female had a common cold 6 weeks ago. This was followed by right forehead pain, upper eyelid edema and a temperature of 38.5 C. Later her fever rose to 40.5 C, the lid edema increased and she started to complain of double vision. On examination the eye showed a downward and lateral proptosis. She now presented to the emergency room with decreased level of consciousness and marked neck rigidity.

CASE 33	
Diagnosis & reasons	Common cold complicated by right frontal sinusitis (forehead pain, upper eye lid edema and temperature 38.5 C) complicated further by subperiosteal orbital abscess (high fever 40.5 C, increased lid edema, proptosis) finally complicated by meningitis (marked neck rigidity and decreased level of consciousness)
Explain the following manifestations	Right forehead pain: due to acute suppurative frontal sinusitis with inflammation of the mucosal lining of the frontal sinus Downward and lateral proptosis: due to the formation of a subperiosteal orbital abscess in the upper medial corner of the orbital cavity which displaces the globe from its position and leads to diplopia Neck rigidity: due to inflammation of the meninges
Further examination &/or investigations	• Endoscopic nasal examination • CT scan with contrast • Ophthalmic examination with fundus examination • Lumbar puncture
Treatment	Antibiotics that cross the blood brain barrier Surgical drainage of the subperiosteal orbital abscess either through the orbit or through the nose by the nasal endoscope Treatment of the underlying frontal sinusitis to prevent recurrence

Case 34:

A 25 year old farmer has been complaining of nasal obstruction, greenish nasal discharge and nasal deformity of one year duration. On examination the nose was broad and contained a lobulated firm mass that may bleed on touch. Also, there was a hard swelling below the medial canthus of the right eye. One week ago, he noticed a change in his voice that was followed by respiratory distress. On examination there was marked stridor and laryngeal examination showed a subglottic laryngeal web.

CASE 34	
Diagnosis & reasons	Rhinoscleroma (greenish nasal discharge, nasal deformity, broad nose, lobulated firm mass that may bleed on touch) with dacryoscleroma of the lacrimal sac (hard swelling below the medial canthus of the right eye) with laryngoscleroma (change of voice, respiratory distress, stridor, subglottic web)
Explain the following manifestations	Greenish nasal discharge: characteristic of the infection caused by the <i>Klebsiella rhinoscleromatis</i> Nasal deformity: due to the fibrosis that accompanies scleroma Hard swelling below the medial canthus of the right eye: due to involvement of the right lacrimal sac by the scleroma tissue which is fibrous and hard the swelling may be cystic and fluctuant in other situations when there is only a nasolacrimal duct obstruction without involvement of the sac with the scleroma tissue Subglottic laryngeal web: scleroma when involving the larynx is commonly in the subglottic region as it is an extension of tracheal scleroma this web is the cause of respiratory distress and stridor
Further examination &/or investigations	• Endoscopic nasal examination and biopsy that will show Mikulicz cell, Russell body and other chronic inflammatory cells especially the active cell in scleroma the fibroblast • CT scan of the nose • CT scan of the larynx and trachea to assess the degree of the subglottic stenosis

Treatment	Medical treatment with Rifampicin Surgical treatment in the form of tracheostomy to relieve respiratory obstruction Laser excision of the subglottic web Removal of the mass in the lacrimal sac and dacrocystorhinostomy
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Case 35:

Following a common cold a 30 year old male started to complain of left forehead pain and edema of the upper eyelid. One week later, his general condition became worse, there was a fever 40 C and rigors. On examination there was right eye proptosis with conjunctival chemosis and paralysis of eye movement. Also, there was a small red, hot tender swelling in the vestibule of the right nasal cavity.

CASE 35	
Diagnosis & reasons	Common cold caused two conditions first left frontal sinusitis (left forehead pain, edema of the left upper eye lid) second right nasal furuncle (small red hot tender swelling in the right nasal vestibule) the second condition is complicated by cavernous sinus thrombosis (fever 40 C and rigors, right eye proptosis, conjunctival chemosis, and paralysis of eye movement)
Explain the following manifestations	Fever 40 C and rigors: spread of infection to the blood in the cavernous sinus causes high fever and rigors Proptosis: thrombosis of the retrobulbar veins leads to retrorbital edema that pushes the eye forwards Conjunctival chemosis: which means edema and congestion of the conjunctive due to occlusion of the venous drainage Paralysis of eye movement: due to affect of the 3, 4, 6 cranial nerves related to the cavernous sinus Swelling in the nasal vestibule: furuncle always occurs in relation to a hair follicle or sebaceous gland those are present in the nasal vestibule as it is lined by skin
Further examination &/or investigations	• Fundus examination • CT scan of the nose • Blood picture (leusocytic count) • Blood culture

Treatment	Intravenous antibiotics Anticoagulants Treatment of the underlying cause furuncle by antibiotic ointment and drainage as it has already caused cavernous sinus thrombosis so there is no fear of such a complication Treatment of frontal sinusitis
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Case 36:

A 40 year old male presented to the ENT clinic with a swelling in the right upper neck of 2 months duration. The swelling was non-tender, firm and progressively increased in size. After a complete ENT examination there was a right conductive hearing loss and a retracted tympanic membrane. Also, there was right vocal fold paralysis and on swallowing there was also some nasal regurge. The patient gave a history of an offensive sanguineous post nasal discharge.

CASE 36	
Diagnosis & reasons	Nasopharyngeal carcinoma with right upper deep cervical lymph node metastasis (early presentation by right upper deep cervical lymph node metastasis, right conductive hearing loss, right retracted tympanic membrane, offensive sanguineous post nasal discharge)
Explain the following manifestations	Right conductive hearing loss and retracted tympanic membrane: due to nasopharyngeal carcinoma destroying the nasopharyngeal orifice of the eustachian tube causing poor aeration of the middle ear causing otitis media with effusion Right vocal fold paralysis: due to involvement of the vagus nerve by the nasopharyngeal carcinoma as the nerve passes just lateral the nasopharyngeal wall Nasal regurge: paralysis of the vagus high up in the neck close to the skull base leads to paralysis of its pharyngeal branch that supplies the palate this palatal paralysis causes nasal regurge
Further examination &/or investigations	• CT scan to see the extent of the malignancy and lymph node metastasis • Nasopharyngoscopy and biopsy • Audiogram and tympanogram

Treatment	Radiotherapy for the primary tumor and the metastasis Radical neck dissection for the residual metastatic lymph nodes after radiotherapy Myringotomy and T-tube insertion of the right tympanic membrane to relieve otitis media with effusion
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Case 37:

A 50 year old female has been complaining of dysphagia for 3 years. The dysphagia was towards solids and stationary in nature. 2 months ago the dysphagia progressed to become absolute, there was a change of voice and some respiratory distress. On examination there was a firm swelling in the neck that was not tender.

CASE 37	
Diagnosis & reasons	Plummer Vinson disease (dysphagia towards solids stationary in nature for 3 years) complicated by hypopharyngeal carcinoma (progression of dysphagia in the last two months to become absolute) with lymph node metastasis (firm non-tender swelling in the neck)
Explain the following manifestations	Dysphagia of 3 years duration: due to Plummer Vinson disease that causes inflammation and fibrosis of the hypopharyngeal and esophageal walls leading to the formation of webs that cause dysphagia Progression of dysphagia: Plummer Vinson disease is premalignant progression of dysphagia means development of malignancy Change of voice and respiratory distress: means involvement of the larynx or the recurrent laryngeal nerves by the malignancy
Further examination &/or investigations	• Indirect laryngoscopy: froth in the region of the hypopharynx, a mass may be seen in the post cricoid, posterior pharyngeal wall or the pyriform fossa and may be laryngeal involvement • Direct hypopharyngoscopy and biopsy • CT scan • Barium swallow • General investigation for the patients condition

Treatment	Total laryngopharyngectomy if the patient's general condition permits with radical neck dissection for the lymph node metastasis Radiotherapy for inoperable cases Chemotherapy Palliative treatment for terminal cases
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Case 38:

A 25 year old male presented to the ENT emergency room with severe right side throat pain, inability to swallow, accompanied by right earache of 2 days duration. The patient was unable to open his mouth and was feverish 40 C. On examination there was a tender swelling at the angle of the mandible. The patient gave a history of sore throat and fever 39 C during the last week.

CASE 38	
Diagnosis & reasons	Acute tonsillitis (history of sore throat and fever) complicated by right peritonsillar abscess – quinzy (right sided throat pain, inability to swallow and to open the mouth, fever 40 C)
Explain the following manifestations	Right sided throat pain: due to the collection of pus in the peritonsillar pain that causes immense throbbing pain Inability to swallow: marked dysphagia accompanying the quinzy that may lead to drooling of saliva from the mouth Right earache: referred pain along the glossopharyngeal nerve (Jackobsen's nerve) Unable to open the mouth: trismus caused by spasm of the medial pterygoid muscle present lateral to the peritonsillar abscess Tender swelling at the angle of the mandible: inflammed jugulodigastric lymphadenitis
Further examination &/or investigations	Complete blood picture with leucocytic count
Treatment	Drainage of the quinzy Antibiotic therapy for the quinzy and acute tonsillitis Tonsillectomy after 2-3 weeks is an absolute indication

Case 39:

A 3 year old child suddenly developed respiratory distress fever 38 C and biphasic stridor. In the ENT emergency room an immediate surgical procedure was done after which there was complete relief of the respiratory distress and the child received the necessary medical treatment. On the next morning the respiratory distress recurred and the attending physician carried out an immediate minor interference that relieved the distress immediately. 2 days later the child was discharged from hospital in a healthy condition.

CASE 39	
Diagnosis & reasons	Acute laryngitis (respiratory distress, biphasic stridor, fever, complete relief by tracheostomy)
Explain the following manifestations	Biphasic stridor: means stridor in both inspiration and expiration caused by lesions in the larynx and the trachea if the condition is accompanied by cough it is acute laryngotracheobronchitis – croup Surgical procedure: is tracheostomy to relieve the respiratory distress Necessary medical treatment: in such a condition it is mainly steroids to relieve the laryngeal edema Recurrence of respiratory distress after tracheostomy: due to tube obstruction by viscid secretions
Further examination &/or investigations	• Close observation of the patient • Examine the heart condition as respiratory distress in children is commonly accompanied by heart failure • Chest X-ray
Treatment	Close observation of the patient in intensive care unit Oxygenation by humidified oxygen Steroids Mucolytics Antibiotics to prevent secondary infection

Case 40:

A 60 year old heavy smoker has been complaining of hoarseness of voice for 3 years. Lately he noticed worsening of his voice and a mild respiratory distress on exertion. There was also cough and some blood tinged sputum. On laryngeal examination a whitish irregular mass was found on the right vocal fold that was found also paralysed.

CASE 40	
Diagnosis & reasons	Right glottic (laryngeal) carcinoma (hoarseness of voice that is worse, mild respiratory distress, cough and blood tinged sputum, whitish irregular mass and the vocal fold is paralysed) the condition followed the original precancerous condition of leucoplakia (hoarseness of voice of 3 years duration in a heavy smoker)
Explain the following manifestations	Mild respiratory distress on exertion: due to the presence of the glottic cancer that may cause narrowing of the laryngeal lumen Blood tinged sputum: carcinoma of the vocal fold may lead to destruction of the fine blood vessels on the vocal fold leading to some bleeding Whitish irreguar mass: white because of hyperkeratosis of the non keratinized vocal fold epithelium due to malignancy irregular because of the fungating mass Vocal fold paralysis: indicates spread of the malignant lesion to involve either the nerve, muscle supply of the right vocal fold that is a deep invasion of the vocal fold, also vocal fold fixation may occur if the cricoarytenoid joint is involved
Further examination &/or investigations	• Direct laryngoscopy and biopsy • CT scan • Chest X-ray • General investigations
Treatment	Surgical: total laryngectomy (because ther is a fixed vocal fold) achieves very good results Radiotherapy Palliative treatment if the condition is terminal

Case 41:

A 70 year old male had loosening of the upper left molar tooth which was extracted followed by loosening of the next 2 teeth. Healing was very slow at the site of extraction and was attributed to his old age. One month later, the patient on blowing his nose noticed left side offensive nasal discharge. He also noticed that his left nasal cavity was slightly obstructed. He now presented with a swelling of the left upper neck that was explained by his dentist as an inflammatory lymph node, but it did not disappear by medical treatment.

CASE 41	
Diagnosis & reasons	Left cancer maxilla (loosening of teeth, absence of healing at the site of tooth extraction, left sided offensive purulent nasal discharge) with left upper deep cervical lymph node metastasis (swelling of the left upper neck not responding to treatment)
Explain the following manifestations	Loosening of the upper left molar teeth: due to destruction of the roots of the teeth and their blood supply by the malignancy in the left maxillary sinus Offensive nasal discharge: due to infection on the necrotic malignant tissue Left nasal obstruction: because of the extension of the malignancy from the maxillary sinus to the nasal cavity Swelling in the left upper neck: lymph node metastasis a common presentation in cancer maxilla sometimes it is the first presentation as the maxillary sinus is one of the silent areas of the head and neck where the secondary malignant nodes may clinically present before the primary site of the tumor
Further examination &/or investigations	• Nasal endoscopy and biopsy • CT scan • General investigations
Treatment	Surgical excision by radical maxillectomy and radical neck dissection Radiotherapy for inoperable cases Chemotherapy for certain tumors Palliative treatment for terminal cases

Case 42:

A 60 year old female patient has been complaining of left earache of 3 months duration. One month ago a swelling appeared in the left side of the neck that progressively increased in size. 2 days ago she complained of change of her voice together with dysphagia. On indirect laryngoscopy there was froth in the region behind the larynx.

CASE 42	
Diagnosis & reasons	Left pyriform fossa malignancy (left earache, change in voice and dysphagia, froth behind the larynx) with lymph node metastasis (swelling on the left side of the neck progressively increasing in size)
Explain the following manifestations	Left earache: due to the presence of a malignant ulcer in the left pyriform fossa causing referred earache along the vagus nerve (Arnold's nerve) Swelling that progressively increased in size: lymph node metastasis from the primary tumor the pyriform fossa that is considered one of the silent areas of the head and neck that present with the secondary metastatic nodes before the clinical presentation of the primary tumor Dysphagia: due to progression of the tumor to involve the postcricoid area and may be the other pyriform fossa leading to obstruction of the laryngopharynx dysphagia is more to solids and later becomes to all swallowed food that is an absolute dysphagia Froth in the region behind the larynx: due to the enlarged tumor this froth is saliva that is difficult to swallow and accumulates in the hypopharynx behind the larynx
Further examination &/or investigations	• Direct laryngoscopy and hypopharyngoscopy and biopsy • CT scan • Barium swallow • Chest X-ray • General investigations
Treatment	Total laryngopharyngectomy with radical neck dissection Radiotherapy for inoperable cases Chemotherapy for certain tumors Palliative treatment for terminal cases

Case 43:

A 60 year old male patient complained of bilateral hearing loss. The patient underwent a minor procedure in an ENT clinic followed immediately by return of his hearing. 2 days later he complained of severe pain in both ears more on the right side. The pain increased on talking and eating and was slightly relieved by analgesics. 2 days later a tender non-fluctuant well circumscribed swelling appeared behind the right auricle.

CASE 43	
Diagnosis & reasons	Right furunculosis (pain in the right ear, increased on talking and eating, tender non-fluctuant swelling behind the right auricle)
Explain the following manifestations	Initial bilateral hearing loss: a common cause that is removed by a minor procedure that is ear wash is bilateral ear wax Severe pain in both ears: diffuse external otitis caused by the ear wash if not carried out under aseptic conditions Pain increased on talking and eating: furuncle is present in the cartilaginous external auditory canal that moves with movements of the jaw and so pain increases Tender non-fluctuant well circumscribed behind the right auricle: due to lymphadenitis of the postauricular lymph node
Further examination &/or investigations	• Audiogram if hearing loss persists • Investigations for diabetes if furuncle recurs
Treatment	Antibiotics Analgesics Local antibiotic and hygroscopic agents Control of diabetes if present

Case 44:

A 50 year old female has been complaining for 10 years of a right forehead headache and intermittent nasal discharge. 2 months ago she noticed a swelling above and medial to the right eye. This was followed by double vision. When she sought medical advice she noticed that nasal discharge had completely stopped. She received medical treatment with no improvement. She was admitted to hospital with a very high fever 40 C, neck rigidity and impaired level of consciousness and continuous forcible vomiting. Vision is blurred.

CASE 44	
Diagnosis & reasons	Chronic right frontal sinusitis (right forehead headache, intermittent nasal discharge) followed by right frontal mucopyocele (swelling above and medial to the right eye, double vision) complicated by meningitis (very high fever 40 C, neck rigidity, forcible vomiting, impaired level of consciousness, blurred vision)
Explain the following manifestations	Double vision: the mucopyocele of the right frontal sinus pushed the eye globe outwards downwards and laterally causing distortion of the visual axis and diplopia the patient tries to correct the visual axis by tilting the head and neck called optical torticollis Nasal discharge had completely stopped: due to obstruction of the duct of the frontal sinus due to formation of the mucopyocele Forcible vomiting: meningitis causes increased intracranial tension with pressure on the chemoreceptor trigger zone in the brainstem leading to projectile forcible vomiting Blurred vision: increased intracranial tension due to meningitis causes papilledema of the optic disc
Further examination &/or investigations	• Lumbar puncture will show turbid CSF under tension that will diagnose meningitis when analysed • CT scan to diagnose the frontal mucopyocele • Complete blood picture

Treatment	Antibiotics that cross the blood brain barrier Brain dehydrating measure as diuretics, mannitol 10% Corticosteroids After cure from meningitis excision of the mucopyoceles surgically through external approach
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Case 45:

A 50 year old female underwent surgery to remove a swelling in the neck that moved up and down with deglutition. Following surgery she started to complain of a very weak voice and choking especially when drinking fluids. 2 weeks later the condition improved and a month later she had no symptoms.

CASE 45	
Diagnosis & reasons	Thyroidectomy (surgery to remove a swelling that moves up and down with deglutition) complicated by injury of the recurrent laryngeal nerve causing vocal fold paralysis (weak voice, choking) followed by compensation from the other healthy vocal fold or recovery of the paralyzed vocal fold (improved condition)
Explain the following manifestations	Swelling moved up and down with deglutition: is a thyroid swelling as the thyroid gland is attached to the larynx with the pretracheal fascia and the larynx moves up and down with deglutition Choking with fluids: the larynx is the sphincter of the airway when the vocal fold is paralysed after injury in surgery some fluids during drinking may find their way into the airway causing cough with some respiratory distress called choking Improved condition: is due to the compensation by the other non-paralyzed vocal fold that is able to move closer to the paralyzed vocal fold and so the larynx is closed during swallowing
Further examination &/or investigations	• Indirect laryngoscopy for follow-up • Laryngeal electromyography • Laryngeal stroboscopy
Treatment	Follow up the condition for at least a year – compensation usually occurs Vocal fold injection by fat or teflon by microlaryngosurgery for cases that do not improve

Case 46:

A 10 year old child was taken to the emergency room complaining of left frontal headache and a mild orbital swelling. He had a severe common cold a week before. On examination he was feverish 38 C with left proptosis and decrease in extreme left lateral gaze. No chemosis and visual acuity 6/6 in both eyes. The patient was admitted and antibiotics started; WBC count 20,000. On the following day, the patient's condition became worse, fever became 39.5 C, the eye swelling increased, still there was no chemosis, visual acuity 6/9 in the left eye and there was marked photophobia.

CASE 46	
Diagnosis & reasons	Common cold complicated by left frontal sinusitis (left frontal headache) further complicated by left orbital periosteitis and left subperiosteal orbital abscess (mild orbital swelling, fever 38 C, left proptosis) finally complicated by orbital cellulitis (worse condition, increased eye swelling, fever 39 C) and optic neuritis (marked photophobia and drop in visual acuity)
Explain the following manifestations	Decrease in extreme left lateral gaze: due to the subperiosteal abscess the eye is pushed outwards, downwards and laterally against the lateral orbital wall and so eye movement in that direction is hindered by the orbital wall No chemosis: means no cavernous sinus thrombosis WBC count 20,000: indicates the presence of suppuration in the form of an abscess Visual acuity 6/9 and marked photophobia: indicates the start of optic neuritis as a complication of orbital cellulitis
Further examination &/or investigations	• CT scan • Ophthalmic examination • Fundus examination • Follow up leucocytic count
Treatment	Antibiotics Analgesics Drainage of orbital abscess either through external approach or endoscopic endonasal approach

Case 47:

A 65 year old male patient had a swelling polypoid in nature in the left nasal cavity, diagnosed by many physicians as a unilateral nasal polyp. He also complained of left decreased hearing and tinnitus. One week ago, a very small swelling appeared in the neck on the left side. The swelling was not tender and firm.

CASE 47	
Diagnosis & reasons	Nasopharyngeal carcinoma (left decreased hearing and tinnitus, polypoid swelling in the nose) with lymph node metastasis (left small neck swelling that is non tender and firm)
Explain the following manifestations	Polypoid swelling in left nasal cavity: due to nasopharyngeal carcinoma the lymphatics draining the nose through the nasopharynx are obstructed causing lymphedema in the nasal mucosa leading to the formation of a polyp this is a secondary lymphatic polyp that if biopsied does not contain malignant tissue so in every case with a polypoid swelling in the nose especially in an adult must examine the nasopharynx for a hidden malignancy Decreased hearing and tinnitus: due to eustachian tube destruction by the nasopharyngeal carcinoma leading to otitis media with effusion Non tender firm neck swelling: lymph node metastasis
Further examination &/or investigations	• Otologic examination: retracted tympanic membrane and fluid behind the drum membrane • Nasopharyngoscopy and biopsy • CT scan • Audiogram and tympanogram
Treatment	Radiotherapy for primary nasopharyngeal lesion and metastatic lymph nodes Radical neck dissection for residual lymph nodes after radiotherapy Myringotomy and T-tube insertion Nasal polypectomy

Case 48:

A 35 year old male patient has been complaining of left continuous offensive otorhea that was purulent in nature for the last 10 years. Recently he suffered from deep seated pain behind the left eye with diplopia. Ear examination revealed a marginal pars flaccida (attic) perforation filled with keratin and surrounded by granulations.

CASE 48	
Diagnosis & reasons	Left chronic suppurative otitis media – cholesteatoma (continuous offensive purulent otorhea of 10 years duration, marginal attic perforation filled with keratin and surrounded by granulation tissue) complicated by petrous apicitis (diplopia and deep seated pain behind the left eye)
Explain the following manifestations	Continuous offensive purulent otorhea: so long as there is a cholesteatoma these manifestations are present due to infection in the cholesteatoma sac the discharge is offensive because of bone necrosis and infection by pseudomonas organism Deep seated eye pain: this is a trigeminal neuralgia due to affection of the trigeminal ganglion as it is present in the trigeminal fossa on the upper surface of the petrous apex Diplopia: due to paralysis of the abducent nerve by the inflammation in the petrous apex as the nerve passes through Dorello's canal causing paralysis of the lateral rectus muscle leading to medial convergent paralytic squint (Ear discharge + abducent paralysis + trigeminal pain = Gardenigo's triade diagnostic for petrous apicitis) Marginal attic perforation: cholesteatoma causes marginal perforation as it causes erosion of the tympanic sulcus and the perforation is present in the attic as the pars flaccida easily retracts causing a cholesteatoma formation
Further examination &/or investigations	• CT scan of the petrous apex • MRI • Audiogram • Culture and antibiotic sensitivity of the ear discharge
Treatment	Antibiotics Removal of cholesteatoma by tympanomastoidectomy

Case 49:

A 16 year old boy was struck in the left temporal region during a motor car accident. He was hospitalized for observation because of altered state of consciousness that subsequently cleared. On examination of his ears there was a serosanguineous otorhea from the left ear. Otologic consultation by a specialist was obtained on the third day and additional findings included lateralized Weber test to the left ear and Rinne negative test also in the left ear. Under sterile conditions ear examination showed a laceration in the posterosuperior wall of the external auditory canal with a tympanic membrane perforation. A small amount of the serosanguineous fluid was present. Facial nerve function was normal. A few days later the patient became feverish 39.8 C, irritable with a change in his level of consciousness.

CASE 49	
Diagnosis & reasons	Longitudinal fracture of the left temporal bone (trauma to the left temporal region, bloody ear discharge, conductive hearing loss by Weber and Rinne test, perforation of the tympanic membrane, laceration of the posterosuperior wall of the external auditory canal) with CSF otorhea (serosanguineous otorhea) complicated by meningitis (fever 39.8 C, irritable, change in the level of consciousness)
Explain the following manifestations	Serosanguineous otorhea: means a clear fluid that is blood tinged, this is CSF as the condition is later complicated by meningitis – to prove that it is CSF it increases by straining and laboratory tests for levels of glucose and proteins Lateralized Weber test to the left and Rinne test negative: means bone conduction is better than air conduction and so the patient is suffering from conductive hearing loss Irritable patient: indicating meningeal inflammation which in its early stages is accompanied by some encephalitic inflammation leading to irritability

Further examination &/or investigations	• CT scan temporal bone to delineate the fracture • Chemical and cellular examination of the fluid coming out of the ear • Lumbar puncture in the stage of meningitis • Audiogram to evaluate the hearing condition
Treatment	Antibiotic that crosses the blood brain barrier for the condition of meningitis Repeated lumbar puncture for meningitis and to control CSF otorhea Semisitting position, avoid straining, diuretics to control CSF otorhea If spontaneous healing and stoppage of CSF otorhea does not occur in a period of 3 weeks then surgical intervention to seal the region of the CSF leak which most probably will be the middle cranial fossa dura at the roof of the middle ear or mastoid Tympanoplasty for tympanic membrane perforation and ossiculoplasty for disrupted ossicles in there is no spontaneous healing in 2-3 months

Case 50:

A 25 year old male is complaining of intermittent mucopurulent discharge from the right ear of 3 years duration. Suddenly 2 weeks ago he developed very high fever together with diminution of his ear discharge. One week ago he accounted for the appearance of a red, hot, tender and fluctuant swelling in the upper neck below the right ear. He received medical treatment with no improvement of his condition.

CASE 50	
Diagnosis & reasons	Right chronic suppurative otitis media – tubotympanic type (intermittent mucopurulent ear discharge of 3 years duration) complicated by mastoiditis (high fever with diminution of ear discharge) followed by a mastoid abscess – von Bezold's infra auricular abscess (red hot tender fluctuant swelling below the right ear in the neck that does not improve with medical treatment)
Explain the following manifestations	Intermittent mucopurulent otorhea: an indication of tubotympanic suppurative otitis media where the discharge contains mucus and may dry up sometimes Very high fever with diminution of ear discharge: Reservoir sign

	an indication of the occurrence of mastoiditis Red hot tender fluctuant swelling in the upper neck below the right ear: due to escape of pus from the mastoid process along the deep surface of the sternomastoid muscle – fluctuant means the presence of an abscess cavity No improvement of the condition with medical treatment: the condition requires surgical drainage and a mastoidectomy to clear the infection in the mastoid
Further examination &/or investigations	• CT scan • Complete blood picture especially leucocytic count • Audiogram • Culture and antibiotic sensitivity test for the ear discharge
Treatment	Drainage of the abscess in the neck Mastoidectomy to clear the mastoid from infection Myringotomy if the tympanic membrane perforation is small to help draining the middle ear Antibiotics following surgery according to culture and sensitivity test Tympanoplasty at a later stage after infection subsides

Case 51:

A male patient 54 years old began to experience difficulty in swallowing of solid food with a sensation of arrest of food at the root of the neck. 2 months later, the difficulty in swallowing included fluids as well. Recently he felt a change of voice together with difficulty in breathing.

CASE 51	
Diagnosis & reasons	Malignancy of the hypopharynx or the esophagus (progressive dysphagia, development of change of voice and difficulty in breathing)
Explain the following manifestations	Sensation of arrest of food in the root of the neck: occurs with obstruction of the alimentary tract at the level of the lower hypopharynx but commonly with esophageal obstruction 2 months later difficulty in swallowing included fluids as well: indicating a progressive dysphagia of a mechanical obstructive nature by a mass lesion that starts towards solids and progresses to include fluids later on Change of voice accompanied by difficulty in breathing: could be due to extension of the tumor to mechanically obstruct the airway or due to recurrent laryngeal paralysis bilaterally causing laryngeal paralysis and change of voice

Further examination &/or investigations	• CT scan of the neck • MRI of the neck • Barium swallow pharynx and esophagus • Hypopharyngoscopy or esophagoscopy and biopsy • General investigations to assess general condition of the patient
Treatment	Surgical excision (total laryngopharyngectomy with esophagectomy and stomach pull up operation) Radiotherapy Chemotherapy Palliative treatment

Case 52:

A 9 year old child was brought to the emergency having headache and vomiting. The attending physician examined him and found neither surgical nor medical gastrointestinal causes for such vomiting. Temperature was 38 C and blood picture revealed leucocytosis. A neurologist was consulted who discovered slowness of speech and weakness in the right upper limb. The patient's parents reported that he has been staggering for the last 2 weeks. They also reported right offensive ear discharge since early childhood. Otologic examination showed a left retracted tympanic membrane and a right red fleshy pedunculated mass with an offensive otorrhea

CASE 52	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (right offensive ear discharge since early childhood, red fleshy pedunculated mass) complicated by right cerebellar abscess (weakness of the right upper limb, staggering, headache and vomiting) and left otitis media with effusion (left retracted tympanic membrane)
Explain the following manifestations	Headache and vomiting with no surgical or gastrointestinal cause: the cause is increased intracranial tension due to the cerebellar abscess Temperature 38 C: usually fever with a brain abscess is not so

	high and maybe subnormal in some instances due to pressure on the heat regulating center Leucocytosis: is diagnostic for the presence of an abscess Slowness of speech: slurred speech occurs in cerebellar ataxia due to incoordination of the muscles responsible for speech Right upper limb weakness: weakness due to hypotonia in cerebellar lesions is on the same side as the pathology in the cerebellum namely the abscess Staggering: incoordination of the muscles for posture leads to staggering and a sensation of vertigo Left retracted tympanic membrane: due to an associated otitis media with effusion in the left middle ear Right fleshy pedunculated mass: an aural polyp occurring with the cholesteatoma in the right ear
Further examination &/or investigations	• Neurologic examination: finger nose test, knee heel test, dysdiadokokinesia • CT scan with contrast to show the cerebellar abscess • Audiogram and tympanogram • Follow up leucocytic count • Fundus examination • No lumbar puncture as this might lead to brainstem conization
Treatment	Drainage or excision of the abscess through a neurosurgical approach Tympanomastoidectomy for cholesteatoma Antibiotics that cross the blood brain barrier Brain dehydrating measures to lower the increased intracranial tension

Case 53:

A laborer fell down from a height and lost consciousness. On examination, he was found comatose with bleeding from the right ear. Few days later he recovered his consciousness and the bleeding from his ear stopped but a clear watery fluid continued pouring from the ear especially on straining. This watery otorhea continued for one month during which he developed recurrent attacks of fever and headache that recovered with medical treatment and a minor procedure. One of these attacks

was characterized by rigors and tender enlarged right upper deep cervical lymph nodes.

CASE 53	
Diagnosis & reasons	Longitudinal fracture of the right temporal bone (fall from height, bleeding from the right ear) with right CSF otorhea (watery otorhea especially with straining) complicated by recurrent meningitis (fever, headache recovered with medical treatment and minor procedure – lumbar puncture) the last attack is lateral sinus thrombophlebitis (fever rigors and tender enlarged upper deep cervical lymph nodes)
Explain the following manifestations	Bleeding from the ear: due to fracture in the external auditory canal and torn tympanic membrane Watery otorhea that increased with straining: CSF flow increases with straining due to increased CSF pressure with straining Minor procedure: is lumbar puncture that causes temporary relief of headache in cases of meningitis due to lowering of the intracranial tension Rigors: infection has reached the blood Tender enlarged upper deep cervical lymph nodes: inflamed nodes due to inflamed internal jugular vein
Further examination &/or investigations	• Blood culture • Leucocytic count • CT scan • Laboratory examination of fluid pouring out of the ear • Audiogram
Treatment	Intravenous antibiotics Anticoagulants Surgical sealing of the CSF leak from the ear Internal jugular vein ligation if the lateral sinus thrombophlebitis is not controlled properly by medial treatment

Case 54:

A 25 year old male patient complained of sore throat fever and bilateral earache of 3 days duration. He then developed very high fever 40 C, severe left earache, inability to open the mouth, drooling of saliva and a minimal difficulty in respiration. He underwent a minor surgical intervention with relief of all symptoms except the sore throat.

CASE 54	
Diagnosis & reasons	Acute follicular tonsillitis (sore throat, fever and bilateral earache) complicated by left peritonsillar abscess – quinzy (high fever 40 C, localized left earache, inability to open the mouth and drooling of saliva)
Explain the following manifestations	Severe left earache: referred along the 9th cranial nerve – glossopharyngeal nerve along its tympanic branch – Jackobsen's nerve Inability to open the mouth: trismus caused by the peritonsillar abscess irritating the medial pterygoid muscle that goes into spasm Drooling of saliva: due to marked dysphagia caused by quinzy the patient is unable to swallow his own saliva that pours out of his mouth Minor surgical intervention with relief of all symptoms: drainage of the quinzy Relief of all symptoms except sore throat: as there is still acute tonsillitis that needs to be treated medically
Further examination &/or investigations	• Complete blood picture • Leucocytic count • General investigations in preparation for tonsillectomy • CT scan or MRI
Treatment	Drainage of the quinzy Medical treatment for acute tonsillitis Tonsillectomy is indicated after 2-3 weeks

Case 55:

A 60 year old female had a severe attack of epistaxis blood came from both nostrils. She received the proper management and the bleeding stopped. After removal of the nasal packs, she had severe frontal headache on the left side accompanied by rise in her temperature and a small amount of an offensive nasal discharge. 2 days later the temperature became higher 40 C, there was impaired consciousness, vomiting, blurring of vision and some neck retraction and backache.

CASE 55	
Diagnosis & reasons	Epistaxis commonly due to hypertension (common cause in adults) the packs caused nasal infection (offensive nasal discharge) and left acute frontal sinusitis (severe frontal headache and rise in temperature) finally complicated by meningitis (rise of temperature 40 C, impaired consciousness, vomiting and blurring of vision, neck retraction and backache)
Explain the following manifestations	Offensive nasal discharge: any nasal packing must be associated with antibiotic therapy to prevent nasal infection causing the offensive nasal discharge Blurring of vision: increased intracranial tension causing papilledema Impaired consciousness: due to increased intracranial tension and some encephalitis Vomiting: due to increased intracranial tension with pressure on the chemoreceptor trigger zone Neck retraction and backache: the meninges are inflamed and so the patient is unable to stretch the meninges in the vertebral column leading to neck retraction and backache
Further examination &/or investigations	• Lumbar puncture • CT scan • Complete blood picture • Culture and antibiotic sensitivity test for the offensive nasal discharge
Treatment	Antibiotics that cross the blood brain barrier Lowering the increased intracranial tension by repeated lumbar puncture, diuretics, steroids and mannitol 10% Surgical drainage of the frontal sinus either endoscopically or directly if the medical treatment fails to control the infection

	Treatment of the underlying cause for epistaxis commonly systemic hypertension
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Case 56:

A 40 year old female was having an offensive purulent ear discharge from the right ear for the last 5 years. Recently, she started to suffer from dizziness on sudden change of head position only. This was described as a momentary feeling of rotation following head movement. Otologic examination revealed a right posterosuperior marginal perforation with a scanty offensive discharge. Rinne test positive and Weber centralized.

CASE 56	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (offensive purulent otorrhea for 5 years, right posterosuperior marginal perforation with a scanty offensive discharge) complicated by a labyrinthine fistula in the lateral canal (dizziness, feeling of rotation with head movement)
Explain the following manifestations	Sense of rotation following head movement only: with head movement the cholesteatoma in the middle ear moves causing pressure on the fistula created in the lateral semicircular canal by erosion leading to stimulation of a healthy inner ear causing this sense of vertigo Rinne test positive: means air conduction better than bone conduction that is normal as there is no destruction of the inner ear and no sensorineural hearing loss, also the cholesteatoma bridges the ossicular gap and transmits sound to the oval window and so there is no conductive hearing loss as well that is why Weber test is centralized
Further examination &/or investigations	• Fistula test by creating pressure in the external auditory canal (finger pressure or siegle pneumatic otoscope) the patient experiences vertigo and clinically nystagmus is noticed in his eyes • CT scan to detect the lateral canal fistula • Audiogram to verify the tuning fork tests • Balance tests

Treatment	Tympanomastoidectomy to remove cholesteatoma and seal the lateral canal fistula
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Case 57:

A 7 year old boy was seen by an ophthalmologist for headache that has been present for the last few months. Headache was maximum between the eyes. However, there was no ocular cause for such a headache. The child was referred to an ENT specialist who noticed nasal intonation of voice and bilateral nasal obstruction. The mother reported that her child snores during his sleep and has repeated attacks of chest infection.

CASE 57	
Diagnosis & reasons	Adenoid enlargement (bilateral nasal obstruction, nasal intonation of voice, snoring)
Explain the following manifestations	Headache between the eyes: could be because of complicated ethmoiditis that causes pain between the eyes or due to the hypoxia of the child especially during sleep because of snoring Nasal intonation of voice: due to nasal obstruction causing rhinolalia clausa in which the letters m is pronounced as b Snoring: due to nasal obstruction and so the child is a mouth breather during his sleep and this causes vibrations of the soft palate and snoring Repeated attacks of chest infection: due to nasal obstruction the child is a mouth breather and air inspired is not cleaned or conditioned by the nose and so causes chest infection, also the enlarged adenoid is infected and causes a descending chest infection
Further examination &/or investigations	• X-ray lateral view skull to show the enlarged adenoid and the narrowed or obstructed airway • Otoscopic examination, audiogram and tympanogram to detect if there is otitis media with effusion • General hematological investigations especially for bleeding tendency in preparation for surgery
Treatment	Adenoidectomy

Case 58:

A 20 year old female complained of severe sore throat of 20 days duration. On examination she showed the presence of ulcers and dirty membranous lesions in the oropharynx and the oral cavity. She gave a history of having typhoid fever 2 weeks prior to the present condition for which she received antibiotic therapy and was still receiving injections of that antibiotic.

CASE 58	
Diagnosis & reasons	Agranulocytosis caused by the famous antibiotic used for typhoid fever namely chloramphenicol (sore throat for 20 days, ulcers covered by dirty membranous lesions in the oral cavity and the oropharynx)
Explain the following manifestations	Sore throat of 20 days duration: agranulocytosis due to a marked decrease in the granulocytes caused diminished local oral immunity causing a sore throat Ulcers with dirty membranous lesions: due to decreased immunity in the oral cavity and the oropharynx the pathogens (bacteria and fungi) present in these spaces start to attack the mucous membrane causing ulcers covered by membranes of necrotic mucosa that do not have a hyperemic margin
Further examination &/or investigations	• Complete blood picture with total and differential leucocytic count • Hematological investigation to exclude primary agranulocytosis due to other causes as leukemia • Follow up hematological analysis
Treatment	Stop the antibiotic given immediately Patient isolation in a special units in a hospital Fresh blood transfusion Bone marrow transplantation in rare resistant cases

Case 59:

A 17 year old male complained of severe epistaxis and was packed to control bleeding. Finally a posterior nasal pack was applied with difficulty and after its removal the bleeding recurred again in a more severe manner. He also complained of nasal obstruction more on the right side together with decreased hearing in the right ear. One month later he developed proptosis of the right eye with no limitation of movement and no affection of vision. There was no swelling in the neck.

CASE 59	
Diagnosis & reasons	Angiofibroma (severe recurrent epistaxis in a 17 year old MALE, nasal obstruction on the right side, proptosis)
Explain the following manifestations	Recurrent severe epistaxis: the angiofibroma is a highly vascular benign tumor that is made up of blood sinusoidal spaces and easily bleeds severely Decreased hearing in the right ear: the angiofibroma causes right eustachian tube obstruction leading to otitis media with effusion and subsequently conductive hearing loss Proptosis with no limitation of movement and no affection of vision: the angiofibroma grows through the inferior orbital fissure and pushes the globe outwards vision is not affected as it does not damage the optic nerve and there is no limitation of eye movement as it does not damage the ocular muscles or nerves as the tumor is benign No swelling in the neck: it is a benign tumor that does not cause any metastasis
Further examination &/or investigations	• CT scan with contrast to show the highly vascular tumor • MRI and MRA • Angiography • Excisional biopsy when the tumor is removed completely no punch biopsy should be attempted once the tumor is suspected as this may cause severe bleeding
Treatment	Angiographic embolization followed by tumor excision through a facial degloving approach or other approaches as the transpalatal, transmaxillary or transnasal

Case 60:

A 50 year old male patient suffered from a stroke and was comatose. He was admitted to hospital where he was intubated and artificially ventilated. He recovered 25 days later and was discharged from hospital. Upon discharge he only suffered from right body weakness, a change of his voice and some dysphagia.

CASE 60	
Diagnosis & reasons	Stroke complicated by neurologic hemiparesis causing the right body weakness
Explain the following manifestations	Change of voice and dysphagia: as a part of the right hemiparesis there is also right vocal fold paralysis causing the voice change and right pharyngeal and esophageal paralysis causing the dysphagia
Further examination &/or investigations	• MRI brain • CT scan • Barium swallow • Laryngeal examination
Treatment	Follow up Rehabilitation of the neurological deficits by phoniatric training and physiotherapy

Case 61:

A 2 year old developed a runny nose. After 2 days there was an inability to respire followed by severe respiratory distress. He was admitted to a pediatric hospital and received medical treatment and kept under close observation. Then 2 hours later he became cyanosed and the attending ENT surgeon found it necessary to perform a surgical procedure to relieve the respiratory distress. Another 2 hours later the distress recurred

but was rapidly corrected by a minor interference by the pediatric interne. 2 days later the child's condition improved remarkably and was discharged from hospital in a healthy condition.

CASE 61	
Diagnosis & reasons	Acute laryngotracheobronchitis – croup (respiratory distress following an attack of common cold runny nose, relief of the respiratory distress by tracheostomy, great improvement of the condition after two days)
Explain the following manifestations	Runny nose: means a catarrhal discharge that occurs with common cold Severe respiratory distress: means dyspnea due to subglottic edema that occurs in the narrow larynx of a 2 year old child causing mechanical obstruction of the airway Medical treatment: used in this case is steroids to relieve the edema in the larynx Surgical procedure to relieve respiratory distress: tracheostomy indicated with marked stridor, marked tachycardia, or signs of respiratory failure as low oxygen saturation Minor interference: the tracheostomy tube is obstructed by secretions that were sucked out using a suction machine Improved condition in two days: croup is a viral infection that is of short duration if treated properly
Further examination &/or investigations	• Other symptoms: mild fever, cough • Check the heart if there is tachycardia this is a sign of heart failure • Laryngeal examination • Chest X-ray
Treatment	Medical treatment: steroids, antibiotics, expectorants and mucolytics Tracheostomy If recurrent condition check for the presence of congenital subglottic stenosis by CT scan or direct laryngoscopy

Case 62:

A 70 year old male suddenly complained of absolute dysphagia. The barium swallow requested showed arrest of the barium at the midesophagus. Esophagoscopy revealed the presence of a foreign body (piece of meat) that was removed and the patient was discharged from hospital after he could swallow again. One month later he developed jaundice and was readmitted for investigation. During his second hospital stay he started to have attacks of hemoptsys.

CASE 62	
Diagnosis & reasons	Cancer esophagus (common presentation is absolute dysphagia in an old patient)
Explain the following manifestations	Arrest of barium at the midesophagus: due to the presence of the foreign body on top of the malignant lesion causing obstruction of the barium flow Jaundice and hemoptsys: means metastasis of the malignancy of the esophagus to the liver and the lung
Further examination &/or investigations	• Esophagoscopy and removal a foreign body from the esophagus must always be followed after removal of the foreign body by reintroducing the esophagoscope to detect any malignancy and take a biopsy from the abnormal tissue causing narrowing of the esophagus • CT scan • Barium swallow • Chest X-ray • Hepatic functions • General investigations
Treatment	Surgical esophagectomy Radiotherapy Chemotherapy Palliative treatment

Case 63:

A 5 year old boy developed change of his voice that was followed by stridor. The stridor was severe enough to necessitate a tracheostomy. 2 years later the tracheostomy site was not fit for respiration, another tracheostomy was done at a lower level. A reddish tissue that was polypoid in nature filled the tracheostomes. The child died a year later when his tracheostomy tube became obstructed at home.

CASE 63	
Diagnosis & reasons	Recurrent respiratory papillomatosis (a resistant condition that occurs in children leading to hoarseness and respiratory distress the condition is famous for recurrence especially at the sites of tracheostomies, reddish tissue polypoid in nature)
Explain the following manifestations	Tracheostomy site was not fit for breathing after 2 years: because of recurrent papilloma at the tracheostome causing obstruction of the airway Reddish tissue polypoid in nature: these are the papilloma the can grow to reach large sizes especially in children Died a year later: most probably due to recurrent papilloma at a level lower than that of the tracheostomy causing airway obstruction
Further examination &/or investigations	• Laryngoscopy • Chest X-ray • Biopsy of papilloma
Treatment	Removal of papilloma by laser microlaryngosurgery Antiviral gamma interferon as the condition is caused by human papilloma virus Tracheostomy in case of severe respiratory distress

Case 64:

A 40 year old female is complaining of attacks of lacrimation and watery nasal discharge accompanied by sneezing. She had a severe attack one spring morning that was accompanied by respiratory difficulty and she was admitted to hospital. She received the proper treatment and her condition improved. On examination she had bilateral nasal obstruction by bluish pedunculated masses that were covered by a clear mucous discharge.

CASE 64	
Diagnosis & reasons	Allergic nasal polypi (history of nasal allergy and the presence of bluish pedunculated masses in the nose)
Explain the following manifestations	Lacrimation: nasal allergy is usually accompanied by spring catarrh of the conjunctiva Sneezing: a reflex due to presence of edematous fluid in the nasal mucosa and one of the symptoms of nasal allergy and occurs in the form attacks with nasal obstruction and a watery nasal discharge Attack accompanied by respiratory difficulty: the respiratory difficulty is due to bronchial asthma a common condition associated with allergic nasal polypi as both are a type I hypersensitivity Bluish pedunculated bluish masses: these are the nasal polypi they are bluish because of venous engorgement by the pressure from the edematous fluid in the mucosa
Further examination &/or investigations	• Laboratory tests for type I hypersensitivity: skin tests, RAST, serum IgE • CT scan of the nose and the paranasal sinuses to show the extent of the nasal polypi • Nasal endoscopy • Chest X-ray
Treatment	Removal of the nasal polypi by nasal endoscopic surgery and ethmoidectomy Treatment of allergy by avoiding the cause, hyposensitization, local and systemic steroids, antihistamines Avoid aspirin and non-steroidal antiinflammatory drugs as they aggravate the type I hypersensitivity

Case 65:

Following a meal a female patient aged 31 complained of severe pain in the right ear together with localized pain in the right side of the neck during swallowing. This pain was relieved by analgesics and local mouth gurgles containing a local anesthetic, but the pain reappeared after the effect of the drugs was over.

CASE 65	
Diagnosis & reasons	Swallowed foreign body like a fish bone (meal, pain in the throat at a certain fixed site relieved by local anesthetics and analgesics)
Explain the following manifestations	Severe pain in the right ear: referred along the vagus or glossopharyngeal nerve according to the site of the foreign body to the ear Pain relieved by local anesthetics: the local anesthetics anesthetize the site of injury by the foreign body and so the pain disappears but appears again after the effect of the drugs is over
Further examination &/or investigations	• X-ray of the neck to locate the foreign body • Laryngopharyngoscopy
Treatment	Pharyngoscopy and removal of the foreign body

Case 66:

A 40 year old male had a tympanoplasty for a chronically discharging ear. During the postoperative period he developed severe headache, blurring of vision and vomiting. This was accompanied later by loss of balance and incoordinated body movements on the side of surgery. His temperature was 37 C, no neck rigidity, but his level of consciousness kept deteriorating day after day.

CASE 66	
Diagnosis & reasons	Chronic suppurative otitis media (chronically discharging ear requiring tympanoplasty) complicated by cerebellar abscess (headache, vomiting, blurring of vision, loss of balance and incoordinated body movements on the same side of the ear)
Explain the following manifestations	Severe headache: due to increased intracranial tension causing stretch of the dura Blurring of vision: due to increased intracranial tension causing papilledema of the optic disc Vomiting: due to increased intracranial tension causing pressure on the chemoreceptor trigger zone Loss of balance: imbalance, vertigo and nystagmus are due to affection of the balance centers in the cerebellum Incoordinated body movements on the side of ear infection: the cerebellum is responsible for coordination of body movements on the same side and abscess will cause cerebellar ataxia leading to incoordinated body movements that appear as tremors, failure to perform certain tests as finger nose test when the eye is closed and failure to perform rapid repetitive movements – dydiadokinesia Temperature 37 C: usually with a brain abscess the temperature is normal or even subnormal because of pressure on the heat regulating center No neck rigidity: there is no meningeal inflammation Deteriorating level of consciousness: this is stupor that occurs in the advanced case of a brain abscess due to spread of encephalitis
Further examination &/or investigations	• Clinical neurological examination for cerebellar ataxia • CT scan with contrast to show the abscess the surgery is not the cause of the abscess the abscess was there before the surgery but in a latent quiescent phase and after surgery renewed infection causes it to present in what is called the manifest phase • MRI • Audiogram
Treatment	Antibiotics that cross the blood brain barrier Brain dehydrating measures to lower the increased intracranial tension Avoid lumbar puncture as this might lead to conization of the brainstem and death Drainage or excision of the brain cerebellar abscess according to its stage whether acute or chronic as determined by the CT scan and MRI findings

Case 67:

A 25 year old male complains of right nasal obstruction and right tenderness of the cheek of 2 years duration. Lately he developed gagging especially on lying on his back together with a purulent post nasal discharge. He underwent surgery and his condition improved but recurred again after one year.

CASE 67	
Diagnosis & reasons	Right chronic maxillary sinusitis (tenderness of the right cheek of 2 years duration) that lead to the formation of an antrochoanal polyp (gagging when lying on the back, purulent post nasal discharge, condition improved after removal of the polyp, possibility of recurrence with antrochoanal polyps)
Explain the following manifestations	Tenderness of the cheek: due to chronic inflammation of the maxillary sinus that might lead to some osteitis of the bony wall causing tenderness Gagging on lying on the back: the antrochoanal polyp if large hangs backwards and may irritate the nasopharyngeal mucosa causing gagging Purulent post nasal discharge: due to chronic sinusitis causing the hypertrophy of the maxillary sinus mucosa and thus the antrochoanal polyp
Further examination &/or investigations	• CT scan paranasal sinus and nose will show an opaque maxillary sinus, a nasal soft tissue mass and a wide sinus ostium • Culture and antibiotic sensitivity of the nasal discharge
Treatment	Excision of the antrochoanal polyp by functional endoscopic nasal and sinus surgery Treatment of chronic maxillary sinusitis until complete cure to avoid recurrence Follow up CT scan Local steroid nasal sprays to minimize tissue reaction and hypertrophy of the mucosa and reformation of the antrochoanal polyp

Case 68:

A 20 year old had a submucous resection operation for a deviated nasal septum. The next day he had edema of the eyelids of both eyes. Temperature 38 C and rigors. 2 days later he developed conjunctival chemosis and blurred vision and an inability to see sideways.

CASE 68	
Diagnosis & reasons	Septal surgery complicated by cavernous sinus thrombosis (fever, rigors, conjunctival chemosis, inability to see sideways)
Explain the following manifestations	Fever and rigors: indicates that infection has reached the blood stream in the cavernous sinus Conjunctival chemosis: edema and congestion of the conjunctive due to venous obstruction of the veins draining the orbit and conjunctiva Blurred vision: due to pupillary paralysis – internal ophthalmoplegia paralysis of the oculomotor nerve as it passes in the wall of the cavernous sinus Inability to see sideways: due to paralysis of the extraocular muscles as their nerves pass in the wall and lumen of the cavernous sinus – oculomotor, trochlear and abducent nerves
Further examination &/or investigations	• Complete blood picture to show leucocytosis • Blood culture to identify the organism and test for the suitable antibiotic • Eye examination especially fundus examination if possible • CT scan with contrast
Treatment	Intravenous antibiotics Anticoagulants Follow up blood picture to notice improvement of condition if the leucocytosis improves

Case 69:

A 16 year old male has been complaining of an offensive continuous ear discharge of 4 years duration. Suddenly he developed double vision and face ache on the same side as the ear discharge.

CASE 69	
Diagnosis & reasons	Chronic suppurative otitis media – cholesteatoma (offensive continuous discharge of 4 years duration) complicated by petrous apicitis (face ache, double vision and discharging ear called Gradenigo's triade diagnostic for petrous apicitis)
Explain the following manifestations	Offensive continuous ear discharge: cholesteatoma causing bone destruction and infection by anerobic organisms Double vision: due to paralysis of the abducent nerve as it passes through Dorello's canal in proximity of the petrous apex Face ache: due to affection of the trigeminal ganglion in the cavum trigeminale on the upper anterior surface of the petrous apex
Further examination &/or investigations	• CT scan with contrast • Complete eye examination including fundus to exclude other complication as cavernous sinus thrombosis • Complete blood picture
Treatment	Treatment of the underlying cholesteatoma by removal by tympanomastoidectomy Antibiotics Rehabilitation of the paralytic lesion in the eye

Case 70:

A 30 year old male had an attack of left severe earache and left loss of hearing together with deviation of the angle of the mouth to the right side and failure to close the left eye. 3 days later, a swelling vesicular in nature appeared in the left external auditory meatus. The condition subsided 10 months later.

CASE 70	
Diagnosis & reasons	Left lower motor neuron facial paralysis (deviation of the angle of the mouth to the right side and failure to close the left eye) due to Herpes Zoster Oticus – Ramsay Hunt Syndrome (severe earache, hearing loss, vesicular swelling in the left external auditory canal, duration of the illness is 10 months)
Explain the following manifestations	Severe earache: before the appearance of the vesicles on the dermatome of the cutaneous branch of the facial nerve the virus of herpes zoster that was dormant in the geniculate ganglion causes severe inflammation of the facial nerve leading to pain and paralysis

	Hearing loss: is a sensorineural hearing loss due to affection of the vestibulocochlear nerve as it passes beside the facial nerve in the internal auditory canal Vesicular swelling: appears in the area of the cutaneous dermatome of the facial nerve namely the posterior part of the most lateral part of the external auditory canal, the concha and parts of the auricle; once the vesicular eruption appears the pain starts to subside
Further examination &/or investigations	• Investigations of the facial nerve (shirmer test, acoustic reflex, topognostic tests, electroneuronography, electromyography) • CT scan to exclude other causes of facial paralysis • Audiogram • Viral antibody titre
Treatment	Antivirals Steroids Facial nerve exploration and decompression if the electroneuronography shows 90% degeneration of the facial nerve fibers within 3 weeks from the onset of paralysis Care of the eye during the paralytic period to prevent lagophthalmus (drops, ointment and bandage during sleep)

Case 71:

A 30 year old male patient has been complaining of an offensive purulent otorhea of the right ear of 3 years duration. A week ago the discharge from the ear became blood stained followed by fever and rigors. 2 days ago the patient developed right edema of the eyelids and double vision and severe conjunctival chemosis together with a deviation of the angle of the mouth to the left side. On examination a bluish area was found behind the right auricle.

CASE 71	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (3 year duration of an offensive purulent otorhea) complicated by lateral sinus thrombophlebitis (fever, rigors, blood stained ear discharge) further complicated by cavernous sinus thrombosis

	(edema of the right eye lids, double vision and severe conjunctival chemosis) and another complication of the cholesteatoma is right lower motor neuron facial paralysis deviation of the angle of the mouth to the left side)
Explain the following manifestations	Blood stained ear discharge: is an indication that the cholesteatoma has eroded the bony walls of the middle ear and mastoid and is approaching a vascular structure as the lateral sinus Fever and rigors: is an indication that the infection has reached the blood stream due to thrombophlebitis of the lateral sinus Edema of the eye lids: due to thrombosis in the retrobulbar veins as a consequence of cavernous sinus thrombosis Double vision: diplopia is due to affection of the cranial nerves responsible for eye movement present in the wall and lumen of the cavernous sinus Severe conjunctival chemosis: due to thrombosis in the cavernous sinus that prevents proper drainage of the ophthalmic veins – the cavernous sinus is affected due to extension of the thrombus from the lateral sinus via the superior petrosal sinus Deviation of the angle of the mouth to the left side: is due to lower motor neuron facial nerve paralysis caused by the original pathology the cholesteatoma Bluish area found behind the right auricle: due to extension of the lateral sinus thrombus to the retroauricular veins via the mastoid emissary vein the sign is called Greissenger's sign
Further examination &/or investigations	• Complete blood picture to show leucocytosis and marked anemia • Blood culture • CT scan for cholesteatoma • Investigations for facial nerve paralysis (shirmer's test, topognostic tests, electroneuronography) • Audiogram • Complete eye examination especially fundus examination may show engorged retinal veins
Treatment	Tympanomastoidectomy for the cholesteatoma Management of the lateral sinus thrombophlebitis surgically according to the operative findings Intravenous antibiotics Anticoagulants Steroids for the facial nerve paralysis Care of the eye

Case 72:

A 4 year old child experienced marked loss of weight due to dysphagia together with choking during feeding after a house accident that occurred 18 months ago. The child was admitted to hospital for investigation. The barium swallow showed a very long esophageal stricture in the middle and lower thirds of the esophagus.

CASE 72	
Diagnosis & reasons	Post corrosive esophageal stricture (accident, loss of weight, dysphagia, long esophageal stricture by barium swallow)
Explain the following manifestations	Marked weight loss: the child is unable to feed due to the esophageal stricture and so loses weight and is unable to grow properly Choking: is an indication that the stricture is very narrow preventing food from passing down and so it accumulates above the stricture and may spill over into the larynx and the trachea causing choking (cough with some respiratory distress) Very long esophageal stricture in the middle and lower thirds of the esophagus: common site for the corrosive to cause injury of the esophageal wall as it accumulates by gravity in the lower parts of the esophagus
Further examination &/or investigations	• Diagnostic esophagoscopy • General investigations
Treatment	Esophagoscopy and dilatation of the esophagus Colon by pass operation Gastrostomy

Case 73:

A 30 year old laborer who is a heavy smoker has chronic cough and expectoration of two years duration. Sputum is yellowish and huge in amount. The patient developed attacks of fever and sweating by night, he also lost some weight. One month ago, the

patient developed a flexion of the neck deformity, severe painful dysphagia and a swelling in the neck on the right side that was cross fluctuating with another oropharyngeal swelling.

CASE 73	
Diagnosis & reasons	Pulmonary tuberculosis (chronic cough and expectoration of large amount of yellowish sputum of two years duration, night fever and sweats, loss of weight) complicated by cervical spine tuberculosis – Pott's disease (flexion deformity of the neck) that lead to a retropharyngeal cold abscess (painful dysphagia, right sided neck swelling that cross fluctuates with an oropharyngeal swelling)
Explain the following manifestations	Night fever and sweats: tuberculous signs of prostration Flexion of the neck deformity: cervical spine tuberculosis leads to destruction of the bodies of the cervical vertebrae causing kyphosis Severe painful dysphagia: tuberculosis causes marked throat pain and painful dysphagia – odynophagia Swelling in the neck that cross fluctuates with another oropharyngeal swelling: cold tuberculous chronic retropharyngeal abscess the oropharyngeal swelling crosses the midline as it is present behind the prevertebral fascia
Further examination &/or investigations	• Investigations for tuberculosis: tuberculin test, aspiration of caseous material from the cold abscess • Chest X-ray • CT scan neck and vertebral column • Barium swallow
Treatment	Antituberculous drugs Excision of the cold abscess Correction of cervical spine deformity

Case 74:

A 2 year old male child suffered from marked difficulty in swallowing, drooling of saliva of 48 hours duration followed by severe respiratory distress. On examination he was very toxic, feverish 40 C with a flexed neck and neck muscle spasm. Oropharyngeal examination showed a congested large swelling behind the right tonsil and not crossing the pharyngeal midline.

CASE 74	
Diagnosis & reasons	Acute retropharyngeal abscess (marked dysphagia, drooling of saliva, fever 40 C, toxic, flexed neck, congested large swelling behind the right tonsil not crossing the pharyngeal midline)
Explain the following manifestations	Marked difficulty in swallowing: marked dysphagia is due to the presence of the abscess behind the pharyngeal wall causing pain during swallowing with some pharyngeal obstruction Drooling of saliva: dysphagia is up to the extent that the child can not swallow his saliva and it drips from his mouth Severe respiratory distress: the edema in the pharynx may extend to involve the larynx causing respiratory distress that may necessitate a tracheostomy Flexed neck: the child places his head and neck in a flexion position in order to minimize the throat pain Swelling not crossing the midline: the abscess is due to suppuration in the retropharyngeal lymph node of Henle present between the buccopharyngeal fascia and the prevertebral fascia, the median pharyngeal raphe attaches these fascia preventing the abscess from crossing the midline
Further examination &/or investigations	• Complete blood picture to show leucocytosis • X-ray lateral view neck • CT scan neck with contrast
Treatment	Tracheostomy in case of respiratory distress Drainage of the abscess through a transoral longitudinal incision in the posterior pharyngeal wall Antibiotics Analgesics Parenteral nutrition or ryle tube feeding

Case 75:

A 30 year old male boxer after a boxing match developed right side watery nasal discharge intermittent in character. 2 days following the match he was taken to hospital with impaired consciousness fever 40 C and vomiting that did not improve by any antiemetics. His level of consciousness deteriorated and he passed away that night.

CASE 75	
Diagnosis & reasons	Traumatic CSF rhinorhea (boxing, unilateral watery nasal intermittent discharge) complicated by meningitis (impaired consciousness, fever 40 C, vomiting, deterioration and death)
Explain the following manifestations	Watery intermittent nasal discharge: following trauma a nasal discharge that is watery and increase with straining Impaired consciousness: due to encephalitis accompanying meningitis Fever 40 C: due to meningeal inflammation Vomiting: due to increased intracranial tension
Further examination &/or investigations	• Other manifestations of meningitis: neck rigidity, Kernig's sign, Brudzinski's sign • Fundus examination • Lumbar puncture to prove meningitis and identify the organism • CT scan for the site of trauma • Laboratory tests for the watery nasal discharge to prove that it is CSF (glucose, protein, chloride) • Lumbar puncture with metrizimide injection to show the site of the CSF leak in the nose
Treatment	Antibiotics that cross the blood brain barrier Lowering of the increased intracranial tension Correction of the fracture in the anterior cranial fossa and stopping the CSF leak from the nose

Case 76:

A 12 year old child had an attack of fever and right ear earache of 3 days duration followed by right ear discharge and relief of the earache but the fever persisted. He received no medical treatment. Ten days later the discharge decreased in amount and the fever was elevated. Later a fluctuant red hot and tender swelling appeared behind the right auricle with preservation of the retroauricular sulcus. Later the swelling released spontaneously a large amount of pus.

CASE 76	
Diagnosis & reasons	Right acute suppurative otitis media (fever, earache of 3 days duration followed by ear discharge) complicated by mastoiditis (persistence and elevation of the fever and a continuous discharge) further complicated by a retroauricular mastoid abscess (fluctuant red hot tender swelling behind the right auricle with preservation of the retroauricular sulcus) later with the formation of a mastoid fistula (swelling spontaneously released a large amount of pus)
Explain the following manifestations	Ear discharge and relief of earache: as the discharge passes out of the ear through a tympanic membrane perforation the pain decreases Decrease of ear discharge and persistence of fever: Reservoir sign an indication for the development of mastoiditis Preservation of the retroauricular sulcus: in case of mastoiditis the edema due to the bone inflammation is subperiosteal elevating the periosteum covering the mastoid process and so the retroauricular sulcus is preserved in case of a subcutaneous inflammation the inflammatory edema extends into the sulcus and obliterates it Spontaneous release of a large amount of pus: means occurrence of a mastoid fistula
Further examination &/or investigations	• X-ray mastoid shows a hazy mastoid appearance • CT scan to show inflammation of the mastoid process and to show a possible underlying pathology as a congenital cholesteatoma • Audiogram • Culture and antibiotic sensitivity test of the ear discharge
Treatment	Mastoidectomy Myringotomy Medical treatment as antibiotics

Case 77:

The mother of a six month old infant complained that her infant had a high fever 40 C, screaming attacks, convulsions followed by rolling of the head sideways. This was followed 5 days later by drowsiness, inability to feed and some diarrhea and neck retraction.

CASE 77	
Diagnosis & reasons	Acute suppurative otitis media (high fever 40 C, screaming due to pain) complicated by meningitis (drowsiness, neck retraction)
Explain the following manifestations	Screaming attacks: infants are unable to localize pain to the ear so pain is presented by screaming Convulsions: may be due to the high fever 40 C Rolling of the head sideways: is an indication that pain is from the ears as the child tries to push the painful ears against his pillow Inability to feed and diarrhea: due to passage of some pus through the wide eustachian tube of a child this pus irritates the stomach and the intestine causing gastroenteritis Neck retraction: indicating meningitis a common complication for acute suppurative otitis media in this age group because the sutures of the skull between the middle ear and the intracranial cavity are still open and can transmit infection and also the tympanic membrane is still thick and does not easily perforate
Further examination &/or investigations	• Otoscope examination may show a congested bulging tympanic membrane with loss of lustre • Neurologic examination (Kernig's sign and Brudzinski's test) • Fundus examination may show papilledema • Lumbar puncture • Culture and antibiotic sensitivity of the ear discharge
Treatment	Antibiotics that cross the blood brain barrier Brain dehydrating measures as diuretics and mannitol 10% in the proper dose Urgent myringotomy to drain the middle ear

Case 78:

A 30 year old male came to the outpatient ENT clinic complaining of torticollis to the left side. On examination, the neck was slightly rigid with severe tenderness on the left side of the neck. He was admitted for investigation of his condition, 2 hours after admission he had an attack of fever accompanied by rigors that was not relieved by antipyretics. The patient gave a history of foul smelling left ear discharge of 7 years duration that

was associated with hearing loss. Ear examination showed an aural polyp and a purulent discharge.

CASE 78	
Diagnosis & reasons	Left chronic suppurative otitis media – cholesteatoma (foul smelling ear discharge of 7 years duration, aural polyp and purulent discharge on examination) complicated by lateral sinus thrombophlebitis (fever and rigors) with extension of the thrombus to the left internal jugular vein (left sided torticollis meaning bending of the neck to the left side, tenderness in the left side of the neck)
Explain the following manifestations	Torticollis: bending of the neck to the left side to minimize the pain in the left jugular vein due to thrombophlebitis Fever and rigors: indicates spread of infection to the blood stream Aural polyp: is an inflammatory reaction to severe otitis media especially with cholesteatoma
Further examination &/or investigations	• Complete blood picture • Blood culture • CT scan • Audiogram
Treatment	Intravenous antibiotics Anticoagulants Tympanomastoidectomy for cholesteatoma after improvement of the general condition of the patient Possibly ligation of the internal jugular vein to avoid showers of septic emboli that might cause fever and rigors and later septicemia and pyemia

Case 79:

A 27 year old male has been complaining of a right purulent otorrhea of 7 years duration. Suddenly he developed attacks of loss of balance and severe sense of rotation. This was followed after 5 days by complete relief of the condition but accompanied by a complete hearing loss in the right ear. Weber tuning fork test lateralized to the left ear.

CASE 79	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (purulent otorrhea of 7 years duration) complicated by serous then suppurative labyrinthitis (loss of balance and a sense of rotation then complete loss of hearing)
Explain the following manifestations	Severe sense of rotation: vertigo due to serous labyrinthitis and irritation of the vestibular receptors Complete relief of the condition of vertigo: due to suppurative labyrinthitis leading to complete destruction of the vestibular receptors and so the patient relies on the receptors of the healthy ear and subsequently vertigo improves Complete loss of hearing: due to destruction of the receptors of hearing Weber tuning fork test lateralized to the left ear: the type of complete hearing loss due to destruction of the cochlear receptors is sensorineural leading to dead ear and so the patient hears the tuning fork in his healthy normal ear with good nerve function
Further examination &/or investigations	• Audiogram • CT scan • Culture and antibiotic sensitivity test • Vestibular tests for posture
Treatment	Tympanomastoidectomy for cholesteatoma Antibiotics Avoid labyrinthectomy as this may lead to spread of infection and meningitis

Case 80:

A 50 year old female presented to the ENT clinic complaining of a change of her voice. On examination, there was a firm neck swelling that was non-tender and progressively increasing in size over the last 3 months. The patient gave a history that during the last year food may arrest at the root of the neck especially solid bulky food.

CASE 80	
Diagnosis & reasons	Plummer Vinson disease (history of dysphagia over the last year with a sensation of arrest of food at the root of the neck) complicated by hypopharyngeal malignancy (common occurrence after Plummer Vinson disease with development of new symptoms of malignant invasion as change of voice and metastatic lymph node)
Explain the following manifestations	Change in her voice: is due to spread of the hypopharyngeal malignancy to the vocal fold or the vocal fold muscle or its nerve supply if the lesion is postcricoid it might lead to fixation of the cricoarytenoid joint causing vocal fold fixation Firm neck swelling progressively increasing size: suspicious of malignant metastatic lymph nodes the hypopharynx especially the pyriform fossa is considered one of the silent areas of the head and neck that present by a metastatic lymph node before clear evidence of the primary tumor
Further examination &/or investigations	• Hypopharyngoscopy and biopsy • CT scan • Barium swallow • Lateral view neck plain X-ray
Treatment	Total laryngopharyngectomy and radical neck dissection Radiotherapy Chemotherapy Palliative treatment

Case 81:

A male patient 52 years old asked medical advice because of severe headache of 2 days duration that was not relieved by the usual analgesics. He gave a history of long standing yellowish foul smelling discharge from the left ear. On examination, the patient was found to be irritable and avoiding light. Temperature was 39 C and pulse rate was 96/min. there was marked stiffness of the neck. Otologic examination revealed a left attic perforation with granulation showing through it.

CASE 81	
Diagnosis & reasons	Left chronic suppurative otitis media – cholesteatoma (long standing foul smelling ear discharge, left attic perforation) complicated by meningitis (headache, irritability, temperature 39 C, neck stiffness)
Explain the following manifestations	Severe headache: due to increased intracranial tension accompanying meningitis Foul smelling ear discharge: accompanies cholesteatoma due to bone necrosis and infection by anerobic organisms Irritability: due to increased intracranial tension and some encephalitis accompanying meningitis Avoiding light: photophobia due to some optic neuritis accompanying meningitis as the optic nerve passes through the meninges Granulations: usually accompany a cholesteatoma and are present around it between the cholesteatoma and the necrosed bone and diseased tissue
Further examination &/or investigations	• Lumbar puncture • CT scan • Audiogram • Culture and antibiotic sensitivity test
Treatment	Antibiotics that cross the blood brain barrier Brain dehydrating measures – diuretics, mannitol 10% Tympanomastoidectomy for the cholesteatoma

Case 82:

A 5 year old child underwent an adenotonsilectomy operation. On discharge from the recovery room, the child was conscious, blood pressure 110/80, pulse rate 100/min and the respiratory rate 16/min. Four hours later, the nurse reported to the resident that the pulse rate became 140/min, blood pressure 100/70 and the child vomited 150 cc of blood.

CASE 82	
Diagnosis & reasons	Reactionary post tonsillectomy hemorrhage (4 hours after an adenotonsillectomy operation, rising pulse, vomiting of 150 cc of blood)

Explain the following manifestations	Rising pulse 100 to become 140/min: is an indication of blood loss as the first compensatory mechanism in the circulatory system is tachycardia Small fall in blood pressure: the blood pressure is compensated by the rising pulse when the heart starts to fail the blood pressure drops indicating hypovolemic shock Vomited blood: is swallowed during the post operative period and is vomited because it causes gastric irritation it is black in color due to the formation of acid hematin
Further examination &/or investigations	• Hemoglobin percentage • Bleeding profile and compare it to preoperative investigations • Blood grouping and preparation of blood transfusion • Continuous observation of pulse and blood pressure
Treatment	Antishock measures (fluid and blood transfusion, steroids) Rapid control of bleeding by readmitting to the operation room and controlling the bleeding which could be either from the adenoid site or the tonsil bed

Case 83:

A male patient 47 years old presented to the otologist because of pain in the left ear of 2 days duration. Pain was throbbing in character and increased in severity during mastication. The patient gave a history of 2 similar attacks in the last six months. On examination, movements of the left auricle were painful and a circumscribed reddish swelling was found arising from the outer portion of the posterior meatal wall. A painful tender swelling obliterated the retroauricular sulcus. Tuning fork testing revealed positive Rinne on both sides and Weber was centralized.

CASE 83	
Diagnosis & reasons	Recurrent furunculosis of the left external auditory canal (3 attacks, throbbing pain, increases with mastication and movements of the auricle, circumscribed reddish swelling in the

	outer portion of the posterior meatal wall)
Explain the following manifestations	Throbbing pain: indicates an abscess as the pus is under tension Increased pain with mastication: due to movements of the outer cartilaginous canal with movements of the jaw; the furuncle always arises in the outer cartilaginous canal as it contains hair follicles and sebaceous glands from which the furuncle arises from Movements of the left auricle are painful: for the same reason as mastication Painful tender swelling obliterated the retroauricular sulcus: this is the post auricular lymphadenitis it obliterates the retroauricular sulcus because it causes edema in the subcutaneous tissue superficial to the periosteum Positive Rinne and Weber centralized: the furuncle is not large enough to cause conductive hearing loss and so the tuning fork tests are normal
Further examination &/or investigations	Investigations for diabetes mellitus (in a case with recurrent furunculosis it is the most probable cause, the investigations are basically a glucose tolerance curve with fasting and every hour glucose test in blood)
Treatment	Systemic antibiotic Analgesic Control of diabetes Local antibiotic ointment or glycerine ichthyol as a hygroscopic agent to help drainage of the furuncle Never incise the furuncle surgically as this may lead to perichondritis of the auricle and consequently cauliflower ear due to fibrosis and deformity of the auricle

Case 84:

A 35 year old male suffered from fever and headache for 5 days for which he received antibiotics and analgesics. The symptoms subsided except for the headache. 2 weeks later there was right side body weakness and the patient complained of vertigo. Nystagmus had no specific direction. Otologic examination revealed a right attic perforation with a foul smelling discharge pouring from it.

CASE 84	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (right attic perforation with a foul smelling discharge) complicated by right cerebellar abscess (fever, headache, right side body weakness, vertigo, nystagmus with no specific direction)
Explain the following manifestations	Headache: due to increased intracranial tension Fever: during the encephalitic stage of the brain abscess it subsides at the end of this stage and the headache remains Right side body weakness: weakness in a cerebellar abscess is due to hypotonia and is on the same side as the abscess Vertigo: due to incoordination of movement leading to imbalance Nystagmus with no specific direction: this is not nystagmus of inner ear origin and so it has no specific direction Attic perforation: means perforation in the pars flaccida – the common site for cholesteatoma
Further examination &/or investigations	• CT scan with contrast • MRI • Audiogram • Culture and antibiotic sensitivity for the ear discharge
Treatment	Drainage or excision of the brain abscess neuro surgically according to the CT scan findings whether acute or chronic abscess Tympanomastoidectomy for the cholesteatoma

Case 85:

A female patient 51 years old was admitted to the hospital because of severe dysphagia of 2 months duration. The condition started by experiencing difficulty in swallowing solid food that arrested at the root of the neck but for the last few days even fluids became also difficult to swallow. She had change of her voice of one month duration and a difficulty in breathing for a few days. She gave a history of dysphagia over the last 10 years. On examination, she had stridor, marked pallor of the mucous membrane of the oral cavity, glazed tongue and marked loss of

weight. Examination of the neck revealed bilateral mobile hard upper deep cervical lymph nodes. The laryngeal click is absent.

CASE 85	
Diagnosis & reasons	Plummer Vinson disease (history of dysphagia over ten years in a female patient) that lead to postcricoid carcinoma (progression of dysphagia over the last two months, absent laryngeal click)
Explain the following manifestations	Progressive dysphagia: it is an intermittent dysphagia when the condition was due to Plummer Vinson disease because of the presence of pharyngeal webs then when malignant change occurs the dysphagia is towards solid food with a sensation of arrest of food at the root of the neck then it progresses when the tumor grows to become an absolute dysphagia to fluids as well and even in more severe cases to the patients own saliva and the patient may experience spill over into the larynx with subsequent cough and respiratory distress namely choking Change of voice: due to laryngeal involvement either directly or involvement of the recurrent laryngeal nerve, the cricoarytenoid joint or the laryngeal musculature Difficulty in breathing and stridor: is due to laryngeal or tracheal involvement by the malignancy leading to respiratory obstruction or could be due to choking because of severe absolute dysphagia Marked pallor of the mucous membrane of the oral cavity: Plummer Vinson disease is accompanied by marked iron deficiency and pernicious anemia Glazed tongue: Plummer Vinson disease is accompanied by glossitis due to pernicious anemia Bilateral mobile hard upper deep cervical lymph nodes : due to lymph node metastasis Absent laryngeal click: postcricoid carcinoma is present behind the cricoid cartilage and so displaces the larynx anteriorly causing absence of the natural click that occurs when the larynx is moved sideways against the bodies of the cervical vertebra
Further examination &/or investigations	• Complete blood picture • General investigations • Hypopharyngoscopy and biopsy • CT scan neck • Barium swallow • Lateral view plain X-ray
Treatment	Total laryngopharyngectomy with radical neck dissection Radiotherapy Chemotherapy Palliative treatment

Case 86:

A 30 year old female suddenly noticed a heaviness in the right side of the face accompanied by a burning sensation of the right eye when she washed her face. There was accumulation of food in the right vestibule of the mouth. All food had a metallic taste. The patient could not tolerate loud sounds. She received the proper care and treatment and after one month there was marked improvement of her condition. There was no fever all through her illness and both tympanic membranes were normal. There was no hearing impairment.

CASE 86	
Diagnosis & reasons	Right lower motor neuron facial paralysis – Bell's palsy (sudden onset and marked improvement of her condition after one month)
Explain the following manifestations	Heaviness in the right side of the face: due to paralysis of the facial muscles the face tissue feels heavy and drops downwards by gravity Burning sensation of the eye when washing the face: the eye is exposed as the eyelids are unable to close completely and so water and soap cause a burning sensation in the eye when washed Accumulation of food in the right vestibule of the mouth: due to paralysis of the buccinator muscles that pushes food into the oral cavity during mastication so when paralyzed food simply is not pushed into the oral cavity and accumulates outside the teeth in the oral vestibule Metallic taste: due to paralysis of the chorda tympani nerve so food is felt by the trigeminal nerve (lingual nerve) only and this gives the metallic taste Could not tolerate loud sounds: due to paralysis of the stapedius muscle that contracts and holds back the stapes if loud sound is exposed to the ear – absent acoustic reflex Marked improvement of her condition: usually cases of Bell's palsy especially in the young age improve greatly and in a short period of time

Further examination &/or investigations	• Topgnostic tests as shirmer's test, salivary pH, gustatory tests for taste • Electrodiagnostic tests for the facial nerve function (electroneuronography, electromyography) • CT scan to exlude other causes of facial nerve paralysis • Audiogram
Treatment	Steroids immediately after the onset of paralysis Antivirals as the possibility of viral infection is there Surgical exploration and decompression of the nerve from edema if the electroneuronography test for facial nerve function shows a 90% degeneration of the nerve fibers within 2 weeks from the onset of paralysis Care of the eye to avoid corneal ulceration Care of the muscles by physiotherapy Follow up electromyography to detect early recovery of the facial nerve

Case 87:

A child 4 years old presented to an ENT specialist because of snoring of two years duration. His mother reported that her son has persistent mucoid nasal discharge that becomes sometimes purulent. For the last month, she began to notice that he does not respond to sounds as before. On examination, the mouth was found open; both tonsils were found enlarged. Both drum membranes were found intact.

CASE 87	
Diagnosis & reasons	Adenoid and tonsillar hypertrophy (snoring, open mouth, enlarged tonsils) complicated by bilateral otitis media with effusion (does not repsond to sounds, intact drum membranes)
Explain the following manifestations	Snoring: indicates adenoid hypertrophy due to bilateral nasal obstruction causing the child to breathe from his mouth as well causing palatal vibrations producing the snoring sound Mucoid nasal discharge that may become purulent: due to infection in the adenoid and the paranasal sinuses especially the ethmoid

	Does not respond to sounds as before: is due to eustachian tube obstruction and subsequent otitis media with effusion and possible the presence of fluid behind the tympanic membrane Drum membrane intact: otitis media with effusion does not cause perforation of the tympanic membrane the tympanic membrane is only retracted and may show a hair line indicating fluid behind the drum
Further examination &/or investigations	• Audiogram will show an air bone gap due to conductive hearing loss • Tympanogram may show type C curve indicating a negative middle ear pressure or a type B curve indicating presence of fluid behind the drum • X-ray lateral view skull will show a soft tissue shadow with narrowing of the nasopharyngeal airway • General investigation in preparation for adenotonsillectomy
Treatment	Adenotonsillectomy Trial medical treatment for otitis media with effusion namely antibiotics and steroids If otitis media with effusion does not improve bilateral ventilation tube insertion – grommet tubes

Case 88:

A male patient 63 years old presented to the hospital because of severe nose bleeding of about 20 min. Pulse rate 120/min, blood pressure 100/60. He gave a history of receiving treatment for hypertension.

CASE 88	
Diagnosis & reasons	Severe epistaxis (nose bleeding, pulse 120/min) caused by systemic hypertension
Explain the following manifestations	Pulse 120/min: this rise in pulse indicates that the epistaxis is severe leading to shock tachycardia is a compensatory mechanism by the heart to correct for the rapid blood loss 100/60 blood pressure: in a hypertensive patient is considered low blood pressure and is a dangerous sign that the patient is shocked
Further examination &/or investigations	• General investigations for a hypertensive patient

Treatment	Antishock measures (fluid transfusion, blood transfusion, steroids, controlled sedation) Stop the bleeding (anterior or posterior nasal pack if failed arterial ligation or endoscopic control of bleeding) Control systemic hypertension in the future to prevent a recurrent episode of epistaxis Correction of any post hemorrhagic anemia by iron therapy
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Case 89:

A female patient 18 years old sought medical advice because of inability to close her right eye of 3 days duration. She gave a history of longstanding scanty bad smelling discharge from her right ear. On examination, a right attic perforation was found.

CASE 89	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (longstanding history of bad smelling discharge from the right ear and a right attic perforation) complicated by right lower motor neuron paralysis (inability to close the right eye of 3 days duration)
Explain the following manifestations	Inability to close the right eye: is due to paralysis of the orbicularis oculi muscle responsible for the final stage of firm eye closure that is supplied by the facial nerve Bad smelling ear discharge: due to bone necrosis by the cholesteatoma and the infection by anaerobic organisms Attic perforation: the cholesteatoma is commonly present in the region of the attic of the middle ear and the perforation appears in the pars flaccida
Further examination &/or investigations	• CT scan to show the extent of the cholesteatoma • Audiogram • Investigations for facial nerve level of paralysis (topognostic tests: Shirmer's test, acoustic reflex if possible, salivary pH, gustatory taste sensation tests) • Investigations for the integrity of the facial nerve (electroneuronography and electromyography)
Treatment	Tympanomastoidectomy for cholesteatoma Management of the facial nerve condition according to the operative findings usually it is an inflammation with granulation tissue and after removal of the cholesteatoma the nerve will recover this can be followed up by the facial nerve integrity tests Care of the eye Care of the muscles by physiotherapy

Case 90:

A male patient 25 years old asked for medical advice because of intense headache together with discharge from the right ear. The ear discharge was scanty, foul smelling and of five years duration. Headache started six weeks ago, increased in the last two weeks and became associated with vomiting, vertigo and blurring of the vision. On examination, the patient was found not alert, having abnormal gait with tendency to fall to the right side. Temperature was 36 C and the pulse rate was 60/min. Examination of the ears revealed right attic perforation and tuning fork testing showed a right conductive hearing loss.

CASE 90	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (scanty foul smelling five year duration ear discharge, right attic perforation) complicated by right cerebellar abscess (headache, vomiting, blurring of vision, vertigo, abnormal gait and tendency to fall to the right)
Explain the following manifestations	Intense headache: due to increased intracranial tension Vomiting: due to increased intracranial tension and pressure on the chemoreceptor trigger zone Vertigo: damage of the vestibular centers in the cerebellum and is usually accompanied by nystagmus Blurring of vision: due to increased intracranial tension and papilledema of the optic disc Patient was not alert: the brain abscess causing some stupor – disturbed level of consciousness Abnormal gait: due to imbalance and incoordinated body movements Tendency to fall to the right: due to hypotonia and weakness of the muscles on the right side of the body the same side as the cerebellar abscess Temperature 36 C: commonly a brain abscess is accompanied by subnormal temperature due to affection of the heat regulatory center

	Pulse rate 60/min: commonly a brain abscess is accompanied by slowness of the pulse bradycardia due to affect of the cardiovascular center Tuning fork tests show a conductive hearing loss: due to cholesteatoma causing destruction in the ossicular chain especially the incus long process and the stapes suprastrucure
Further examination &/or investigations	• Search for other clinical neurological manifestations of cerebellar attaxia: tremors, incoordinated body movements, slurred speech, finger nose test, dysdiadokokinesia) • CT scan with contrast to show the cerebellar abscess • Audiogram • Complete blood picture for leucocytic count it is high so long as there is an abscess • Fundus examination for papilledema • Avoid lumbar puncture as it might lead to brainstem conization and death • Culture and antibiotic sensitivity test
Treatment	Tympanomastoidectomy for the cholesteatoma Drainage or excision of the cerebellar abscess neurosurgically according to the findings in the CT scan Antibiotics that cross the blood brain barrier Brain dehydrating measures to lower the increased intracranial tension

Case 91:

A male patient 50 years old presented with nasal obstruction and impairment of hearing in the right ear of 4 months duration. On examination, the patient had nasal tone of voice and on asking him to say AAA the right side of the soft palate was found immobile. Examination of the neck revealed bilateral enlargement of the upper deep cervical lymph nodes which were hard in consistency. Examination of the right ear showed retraction, loss of luster and a waxy appearance of the tympanic membrane.

CASE 91	
Diagnosis & reasons	Nasopharyngeal carcinoma (impairment of hearing in the right ear with a retracted tympanic membrane, nasal obstruction, immobility of the right side of the soft palate) with bilateral lymph node metastasis (bilateral enlarged upper deep cervical lymph nodes that are hard in consistency)
Explain the following manifestations	Impairment of hearing in the right ear: due to destruction of the nasopharyngeal orifice of the eustachian tube causing otitis media with effusion due to poor aeration of the middle ear Nasal tone of voice: due to palatal paralysis it is a rhinolalia aperta where the letter K and G are replaced by A Right side of the soft palate is immobile: due to involvement of the palatal muscles and nerves by the nasopharyngeal carcinoma present above the soft palate Hard upper deep cervical lymph nodes that are bilateral: lymph node metastasis the nasopharynx commonly sends bilateral lymph node metastasis Loss of lustre and waxy appearance of the tympanic membrane: due to retraction and poor aeration of the middle ear, waxy appearance means that the drum has lost its lustre and is no longer shining or glistening
Further examination &/or investigations	• CT scan • Nasopharyngoscopy and biopsy • Audiogram and tympanogram
Treatment	Radiotherapy for the primary lesion and the secondaries Radical neck dissection for the residual secondaries in the lymph nodes if they are not cured by the radiotherapy T-tube insertion in both drum membranes as the damage in the eustachian tube is permanent Chemotherapy in certain tumors Palliative treatment for terminal cases

Case 92:

A male patient 23 years old presented with impairment of hearing in both ears of about 4 years duration. Hearing impairment was more noticed in the right ear. He gave a history of longstanding on and off yellowish discharge from both ears. He had no vertigo or tinnitus. Examination of the ears revealed bilateral dry central kidney shaped perforations of both drum

membranes. Tuning fork testing demonstrated bilateral negative Rinne test and Weber test lateralized to the right ear.

CASE 92	
Diagnosis & reasons	Bilateral chronic suppurative otitis media – tubotympanic type (longstanding on and off yellowish ear discharge, impairment of hearing, bilateral central kidney shaped perforations)
Explain the following manifestations	Longstanding on and off yellowish ear discharge: in tubotympanic otitis media the discharge is intermittent and appears with every bout of infection No vertigo and tinnitus: as the ears are drained every time of infection there is no vertigo or tinnitus it might be present during the attack of infection Dry central kidney shaped perforations of the drum: dry as there is no infection at the moment, central indicating that there is a rim of drum membrane and annulus all around and that it is not a cholesteatoma, kidney shaped the drum membrane receives its blood supply from the annulus and along the handle of the malleus so in case of necrosis of the drum due to infection the areas most further away from the blood supply take a kidney shaped appearance Bilateral negative Rinne test: indicating that bone conduction is better than air conduction that is the patient has a bilateral conductive hearing loss Weber lateralized to the right ear: indicating that the conductive hearing loss on the right is greater than the left this could be due to a larger perforation or exposure of the round window by the perforation (round window baffle effect) or an auditory ossicular disruption accompanying the perforation – it also could indicate a sensorineural affection of the left ear and this is unlikely as there is no tinnitus and the patient subjectively feels that his right ear is worse
Further examination &/or investigations	• Audiogram to detect type of hearing loss and have a documented record of the hearing status of the patient • X-ray mastoid • Culture and antibiotic sensitivity of the ear discharge
Treatment	Myringoplasty or tympanoplasty for both ears with six month interval starting with the worst hearing ear first Antibiotics for any ear infection if it occurs

Case 93:

A 10 year old child presented to the outpatient ENT clinic because of severe headache of 5 days duration which did not respond to the usual analgesics. His mother reported that her son had his right ear discharging for the last 2 years. On examination, the child's general health was bad, he was irritable and his temperature was 39 C, pulse 100/min and there was marked neck stiffness. Examination of the right ear revealed fetid aural discharge from an attic perforation.

CASE 93	
Diagnosis & reasons	Right chronic suppurative otitis media – cholesteatoma (fetid right ear discharge for the last 2 years, attic perforation) complicated by meningitis (headache, irritable, temperature 39 C, neck stiffness)
Explain the following manifestations	Severe headache: due to increased intracranial tension with stretch of the dura overlying the brain General health is bad: due to the marked toxemia that accompanies meningitis Irritable: due to some encephalitis accompanying meningitis Marked neck stiffness: due to meningeal inflammation Fetid aural discharge: means a bad smelling ear discharge due to bone necrosis by the cholesteatoma and infection by anerobic organisms
Further examination &/or investigations	• Lumbar puncture to diagnose the condition • CT scan for the ear to show the cholesteatoma • Audiogram • Culture and antibiotic sensitivity
Treatment	Antibiotics that cross the blood brain barrier Lowering intracranial tension (diuretics, mannitol 10%) Repeated lumbar puncture to lower intracranial tension Tympanomastoidectomy for the cholesteatoma

Case 94:

A male patient 32 years old was referred from a Neurosurgeon for otological evaluation. The patient had a motor car accident 2 days before. He gave a history of loss of consciousness for a few minutes together with bleeding from the right ear. The patient stated that he could not move the right side of his face since the recovery of consciousness. On examination, blood clots were found in the right external auditory meatus, ecchymosis of the right tympanic membrane and a central posterior perforation with irregular edges could be seen. Tuning fork examination revealed Rinne test was negative in the right ear and positive in the left ear. Weber test was lateralized to the right ear. The patient could not close the right eye or move the right angle of his mouth.

CASE 94	
Diagnosis & reasons	Right longitudinal fracture of the temporal bone (trauma in a motor car accident, right ear bleeding) complicated by right lower motor neuron facial paralysis (inability to move the right side of the face)
Explain the following manifestations	Bleeding from the right ear: otorrhagia due to a torn tympanic membrane and a fracture in the roof of the external auditory canal Central perforation with irregular edges: traumatic rupture of the tympanic membrane due to the fracture Rinne test negative in the right ear: due to conductive hearing loss Weber test lateralized to the right ear: conductive hearing loss
Further examination &/or investigations	- CT scan to delineate the longitudinal fracture in the temporal bone - Topognostic test to determine the level of facial nerve paralysis (shirmer test, acoustic reflex, salivary pH,

	gustatory taste test) • Tests for integrity of the facial nerve (electroneuronography, electromyography) • Audiogram
Treatment	Exploaration and repair of the facial nerve if the electroneuronography shows a 90% degeneration within one week of the onset of paralysis Myringoplasty for the perforation of the tympanic membrane if it does not heal spontaneously Ossiculoplast for any auditory ossicular damage

Case 95:

A 19 year old girl presented to the ENT specialist because of bleeding from the right ear, impairment of hearing and tinnitus following a slap on the right ear one hour before. On examination, blood clots were found in the right external auditory meatus, the drum membrane showed a bluish coloration along the handle of the malleus and a central anteroinferior perforation with irregular contused edges. Tuning fork testing revealed Rinne test negative in the right ear and Weber lateralized to the right ear.

CASE 95	
Diagnosis & reasons	Traumatic perforation of the right tympanic membrane (slap to the ear, central anteroinferior perforation with contused edge)
Explain the following manifestations	Bleeding from the right ear: due to tear in the drum membrane Impairment of hearing and tinnitus: due to tympanic membrane perforation causing a conductive hearing loss Irregular contused edge: due to the tear in the tympanic membrane caused by physical trauma the slap to the ear Weber test lateralised to the right ear: indicating a conductive hearing loss caused by the tympanic membrane perforation
Further examination &/or investigations	• Audiogram

Treatment	Conservative treatment (avoid water in the ear, avoid blowing the nose forcibly) usually most perforations heal spontaneously in 3-4 weeks time Myringoplasty if perforation persists after 6 weeks time
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Case 96:

A male child 3 years old presented to the emergency room of the hospital at 3 am because of severe respiratory distress of one hour duration. His mother stated that her child was awakened from sleep by cough, hoarse voice and respiratory distress. On examination, temperature 39 C, pulse rate 110/min and the respiratory rate was 30/min. The child had stridor more manifest during inspiration, he had working ala nasi and supraclavicular recession. However, he was not cyanosed.

CASE 96	
Diagnosis & reasons	Acute laryngotracheobronchitis – croup (sudden onset of marked respiratory distress with biphasic stridor more marked with inspiration with cough)
Explain the following manifestations	Cough: due to inflammation of the larynx trachea and bronchi there is increased viscid mucous secretions in the airway causing cough Hoarse voice: due to subglottic edema extending to the undersurface of the true vocal folds leading to change of voice Temperature 39 C: usually temperature is lower than that but it may be elevated as in this case according to the type of the organism causing the condition Pule rate 110/min: indicating affection of the heart by heart failure Stridor more manifest during inspiration: stridor means a sound produced due to respiration against partial airway obstruction it is more manifest during inspiration as the main power of breathing occurs during inspiration against the subglottic edema in the airway Working ala nasi and recession of the supraclavicular areas: is an indication of forcible breathing against an obstructed airway due to the negative pressure created inside the chest cage

	Not cyanosed: indicates that the patient has not reached the critical level of low oxygenation that leads rapidly to death but one should not wait until such an occurrence – also in anemic patients that do not manifest cyanosis until very late when the condition is very advanced
Further examination &/or investigations	• Chest X-ray • Laryngoscopy • Investigations to detect rapidly heart failure
Treatment	Urgent steroids in large doses Very close observation Oxygenation by humidified oxygen Endotracheal intubation if required Tracheostomy in advanced cases Correction of heart failure Antibiotics to prevent complications

Case 97:

A female patient 23 years old asked for medical advice because of sudden inability to close the right eye and deviation of the angle of the mouth on smiling to the left side of 2 days duration. She noticed discomfort on hearing loud sounds and a change in the sense of taste in her mouth. She gave no history of trauma or aural discharge prior to her illness. ENT examination revealed inability to mobilize all the muscles of the right side of the face. The right external auditory meatus and the tympanic membrane were found normal.

CASE 97	
Diagnosis & reasons	Right lower motor neuron paralysis – Bell's palsy (sudden onset of facial paralysis with no apparent cause)
Explain the following manifestations	Deviation of the angle of the mouth to the left side during smiling: due to paralysis of the orbicularis oris muscle with its component the levator anguli oris this occurs with lower motor neurone facial paralysis but with upper neuron paralysis the mouth is paralysed also with voluntary movements if you ask the patient to show his teeth but with involuntary emotional movements as a spontaneous smile or laugh the mouth may

	move normally Discomfort on hearing loud sounds: due to paralysis of the stapedius muscle that prevents loud sounds from causing vibration of the stapes and hence lowers the amount of energy entering the inner ear Change in the sense of taste: due to paralysis of the chorda tympani nerve
Further examination &/or investigations	• Topognostic tests for the level of facial nerve paralysis (Shirmer's test, acoustic reflex, salivary pH, gustatory taste tests) • Investigations for the integrity of the facial nerve (electroneuronography, electromyography) • Investigations to exclude any hidden cause for facial paralysis (CT scan, MRI)
Treatment	Urgent therapy with steroids (1mgm/kgm body weight) and then taper the dose Exploration and decompression of the facial nerve in its course in the temporal bone if the electroneuronography results reach 90% degeneration in a period of 2 weeks (14 days) from the onset of the paralysis Care of the eye to prevent the occurrence of lagophthalmus and corneal ulceration (drops, ointment, coverage) Care of the muscles by physiotherapy Follow up recovery by the return of polyphasic electric potentials in the electromyography tests

Case 98:

A 54 year old male patient who is a heavy smoker presented to the ENT clinic with change of his voice in the form of hoarseness of 2 months duration. There was no recent laryngitis or voice abuse. Laryngeal examination was not possible.

CASE 98	
Diagnosis & reasons	Cancer larynx (heavy smoker, hoarseness of voice of 2 months duration) another possibility is left bronchial carcinoma that has caused left recurrent laryngeal paralysis and thus left vocal fold paralysis or pancoast tumor in the upper lobe of the lung leading to either recurrent laryngeal nerve paralysis and vocal fold paralysis

Explain the following manifestations	Hoarseness of voice: is due to glottic carcinoma causing inability of the vocal folds to coapt their edges and produce proper voice or due to vocal fold paralysis causing weakness in the production of voice
Further examination &/or investigations	• Flexible nasolaryngoscopy under local anesthesia to visualize the larynx • Chest X-ray to detect bronchial or pancoast tumors • CT scan neck and chest • Direct laryngoscopy and biopsy
Treatment	If cancer larynx total or partial laryngectomy or laser endoscopic excision according to the lesion If lung or bronchial carcinoma treated accordingly Radiotherapy Palliative treatment in terminal cases

Case 99:

A 16 year old male patient traveled to Hurghada by airplane. On descent there was some headache and earache that subsided after 3 hours. The next day he took part in a scuba diving training course, the pain in his forehead became rather severe and was not relieved by any analgesics. During the night he became feverish with marked nasal obstruction and in the morning there was marked bilateral upper eyelid edema. He returned to Cairo and received antibiotic therapy and improved slightly but there was no nasal discharge. On the third day of antibiotic therapy, he became feverish again 40 C and there was severe headache, vomiting and he avoided light. Later his vision was blurred and he was very irritable. He was taken to hospital, intensive intravenous antibiotics were given and a lumbar puncture performed. His condition improved remarkably during the next few days.

CASE 99	
Diagnosis & reasons	Sinus barotrauma (descent from height by airpalne and then scuba diving) followed by bilateral acute frontal sinusitis (fever, nasal obstruction, bilateral eye lid edema) complicated by meningitis (fever 40 C, severe headache, vomiting, avoided light, blurred vision, irritablity, lumbar puncture improved the condition)
Explain the following manifestations	Earache: is due to otitic barotrauma due to descent of the airplane it improves after sometime due to swallowing and aeration of the middle ear throught the eustachian tube Severe pain of the forehead and headache following scuba diving: due to acute frontal sinusitis initiated by sinus bartrauma Marked bilateral upper eye lid edema: due to frontal sinusitis causing edema over the forehead extending downwards the eye lids No nasal discharge: indicating an obstruction of the nasofrontal ducts and no drainage these cases are more liable for complications as the pus in the sinus is not drained Fever 40 C: indicates the occurrence of a new complication namely meningitis Severe headache: due to increased intracranial tension and stretch of the meninges especially the dura Vomiting: due to increased intracranial tension and pressure on the chemoreceptor trigger zone Avoided light: due to photophobia accompanying meningitis due to some optic neuritis as the optic nerve passes through the meninges Bluured vision: due to increased intracranial tension and pappiledema of the optic disc Condition improved after lumbar puncture: due to lowering of the increased intracranial tension
Further examination &/or investigations	• Lumbar puncture to diagnose meningitis • Fundus examination to see pappiledema • CT scan paranasal sinuses and nose • Nasal endoscopy
Treatment	Antibiotics that cross the blood brain barrier Repeated lumbar puncture to lower the increased intracranial tension Lowering the intracranial tension by diuretics and mannitol 10% Management of the acute frontal sinusitis by medical or surgical treatment

Case 100:

A 35 year old male patient has been complaining over the last 10 years of attacks of incapacitating vertigo, tinnitus and decreased hearing. During the attack there was a sense of aural fullness, the patient described it as if his ear is about to explode. In between the attacks that usually occur once or twice a week the patient feels fine or may have a minor sense of imbalance. The patient also reported that his hearing ability is decreasing over the years. Examination of the ears showed bilateral normal tympanic membranes and some non-occluding earwax.

CASE 100	
Diagnosis & reasons	Meniere's disease (attacks of vertigo, tinnitus and decreased hearing with aural fullness)
Explain the following manifestations	Incapacitating vertigo: means vertigo severe enough to prevent the patient from any balance or movement this usually occurs in Meniere's disease due to increased inner ear pressure – endolymphatic hydrops – irritating the vestibular receptors Tinnitus: due to irritation of the cochlear receptors by the increased pressure in the inner ear and due to the presence of a certain degree of sensorineural hearing loss Decreased hearing during the attack: is due to pressure on the cochlear receptors by the increased inner ear pressure Aural fullness: is a manifestation always present in Meniere's attack Decreased hearing over the years: is sensorineural in nature and occurs due to damage of the cochlear receptors by the attacks over the years it usually starts with the low sound frequency receptors present in the apical and middle cochlear turns Non-occluding ear wax: an associated finding in the ear that has no relation to Meniere's disease
Further examination &/or investigations	• Audiogram and tympanogram • Vestibular function tests • Posturography • CT scan to exclude other causes

Treatment	Medical treatment during the attack (diuretics, salt restriction, labyrinthine sedatives, systemic sedatives, antiemetics) Surgical treatment in certain cases as sac decompression in rare cases Selective vestibular neurectomy in persistent and resistant cases that do not respond at all to medical treatment and these are very rare cases

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